First Copy

Fleet Owner

evoted to the better operation and maintenance of all automotive fleets

OLUME 25 OCTOBER, 1940 No. 4

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OCT 18 1940
DETROIT

EXTRA EARNING POWER!

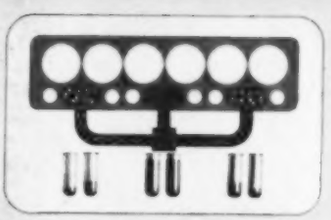
. . . AT LEAST 1 MILE MORE PER GALLON OF GAS
. . . TIME-SAVING PERFORMANCE IN TRAFFIC
. . . LOW MAINTENANCE COST OVER HIGH MILEAGE

New 1941 Styling CONVENTIONAL ▲ C.O.E. ▼

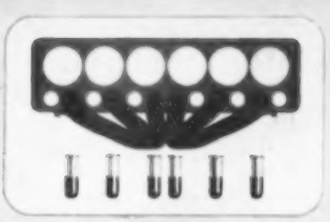
NOW every White has SUPER POWER!
Trucks, Tractors, Six Wheelers from 1½ tons up!

Phone Your Local Branch or Dealer
or Write WHITE MOTOR COMPANY
Cleveland, Ohio

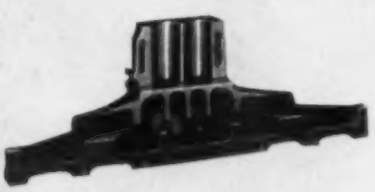
HERE'S WHY WHITE SUPER POWER GIVES YOU AT LEAST 1 MILE MORE PER GALLON



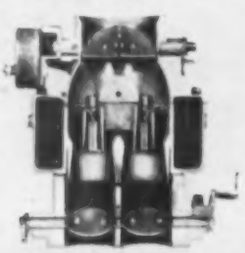
ORDINARY MANIFOLD . . . fails to supply the proper proportion of fuel to each cylinder. The exposed areas of long intake pipes causes fuel to condense and go to waste.



SUPER POWER MANIFOLD . . . with duplex carburetor saves fuel and increases power by supplying each cylinder with a perfect proportion and amount of fuel mixture.



METERING MANIFOLD . . . Six graduated ports, fed by a dual carburetor, assures that each cylinder receives the same balanced mixture. Condensation is reduced to an absolute minimum. No "starved" end cylinders.



DUPLEX CARBURETOR . . . acts as *tw* carburetors—one for each set of three cylinders, further contributing to proper amount and mixture of fuel and air in each cylinde

SUPER White POWER

LARGE WESTERN OPERATOR rolls 68,000-lb. units like these over all kinds of roads in all kinds of weather. For 5 years, this operator hasn't experienced any time-out for wheel-bearing trouble — thanks to TEXACO MARFAK.

34-Ton Units Go Millions of Truck-Miles

without wheel-bearing failure

AT THE CONCLUSION of a test of some 135,000 miles of hard going in truck No. 277 and trailer No. 98, wheel bearings were found in first class order, and the *Marfak* good for long additional service.

THIS is the 5-year record of a large Diesel truck fleet owner. Operating 24-hour service in scorching heat and sub-zero cold, this trucker has reduced operating and repair costs, lengthened life of wheel bearings, and extended mileage between lubrications.

For 5 years, this prominent fleet operator has lubricated wheel bearings and chassis exclusively with *Texaco Marfak*.

Texaco Marfak provides a tough, adhesive film that cushions bearing surfaces against road shocks and wear. It seals itself in, seals dirt, grit and road splash out. It maintains its original consistency at the outer edges of the bearing while lubricating effectively within.

Texaco Marfak protects wheel bearings, steering connections, spring shackles twice as long as ordinary grease.

Trained automotive engineers will gladly cooperate in making savings with *Texaco Marfak* in your fleet. Phone the nearest of more than 2300 Texaco warehousing points in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York, N. Y.

TEXACO DEALERS INVITE YOU to enjoy Fred Allen in the new full-hour program of The Texaco Star Theatre . . . with Kenny Baker, Al Goodman's Orchestra and a great cast. Every Wednesday Night, Columbia Network, 9:00 E.S.T., 8:00 C.S.T., 10:00 M.S.T., 9:00 P.S.T.

TEXACO

REG. T.M.

TEXACO MARFAK

WHAT FLEET OPERATORS
ARE LOOKING FOR
IN SPARK PLUGS
CHAMPION
PATENTED
CHAMPION
HEMPSTEAD
BUS CORPORATION
Champion Spark Plug Co.
Toledo, Ohio
Gentlemen:
For approximately 15 years our fleet of buses, operating in communities within Nassau County, New York, have used Champion Spark Plugs exclusively. The only exceptions to this were when other makes were left for trial but these were found wanting.
Champion Spark Plugs have always given us 100% satisfaction. Their economy and dependability, coupled with their perfect performance, are just what we fleet operators are looking for in spark plugs.
Very truly yours,
HEMPSTEAD BUS CORPORATION
President

LETTERS like this prove how successfully Champion has for 30 years constantly and continuously improved their spark plugs to give you greatly improved performance, dependability and economy in your entire fleet. And now with the new Champion Sillment seal—their latest and greatest development—you receive even better performance than before.

Sillment is the sensational new material used to seal Champions against gas or compression leakage at the shoulder and past the center electrode. Since even one "leaker" in a set will cause rough, uneven, wasteful engine operation, it is obvious that Champion's leakproof qualities are necessary to maximum performance and economy.

Profit by the example of successful fleet operators the country over and equip your entire fleet with Champion Spark Plugs. You'll be amply repaid with better performance and increased economy and dependability

CHAMPION SPARK PLUGS

Built to "TAKE IT"!

Ever watch a service man give a tire valve "the works" to line up a tube when mounting a tire? Some use special tools—most just reach for their pliers, grab the valve and haul away. Leaky valves would be common if the more than one hundred and fifty million standard tire valves in daily use were not "built to take it".

Schrader tire valves have a "backbone" machined from solid brass rod. Extending full length, this sturdy housing completely safeguards the valve mechanism from plier pressure, rim hole friction and the wear and tear of mounting. The valve cap provides the final safeguard against the normal abuses of everyday operation. Guaranteed airtight up to 250 lbs. pressure, it shuts out dirt . . . and seals the valve mouth.

Schrader
REG U.S. PAT. OFF.
TIRE VALVES

A. SCHRADER'S SON *Division of Scovill Manufacturing Company, Incorporated* **BROOKLYN, NEW YORK**

THE ECONOMY TRUCKS

FORD

Big jobs are in the making for 1941. They're jobs that have got to be done fast, efficiently, economically. Here are the 1941 Ford Trucks that are built to meet these present-day dimensions for dollar-saving dependability.

They "have everything." Choice of power. Range of wheelbases. Wide range of body and chassis types. And the kind of economy that really counts — *over-all* economy.

The 95-hp Ford V-8 engine has an extra margin of horsepower not offered in any other low-price truck, and sells at several hundred dollars less than any other truck with equal horsepower rating. The 95-hp engine is teamed up with the famous Ford 85-hp engine that has proved its dependability and economy in billions of miles of payload performance.

There's new styling and there are many new improvements and refinements. Above all, there is the down-to-earth quality and economy that have made Ford V-8 a symbol of dollar-saving performance in nearly every kind of hauling and delivery work.

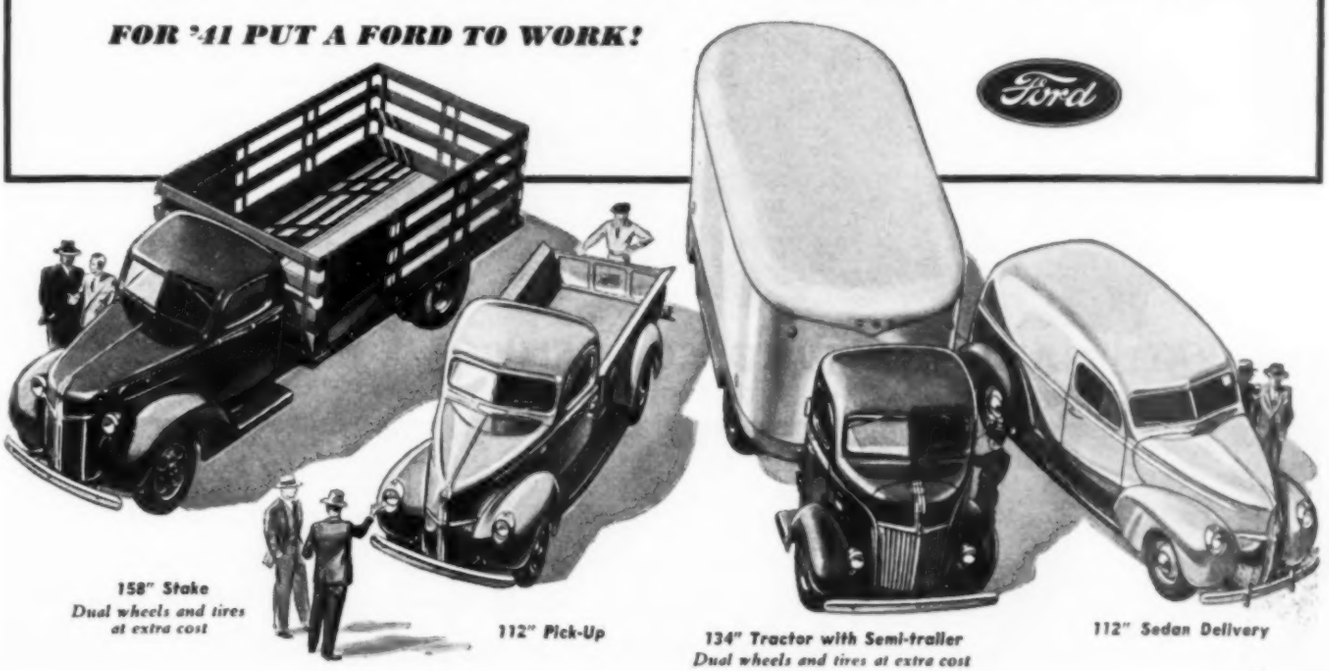
See the Ford V-8 Truck at your Ford dealer's. Put one to work on your job and test it your own way. Prove to yourself that this is the unit to do your job, in less time, at lower cost.

1941 FORD FEATURES

Two V-8 engines — 95 and 85 hp ★ New 4-cylinder 30-hp engine for maximum economy in Commercial Cars, ¾ and One-Ton Trucks ★ Six wheelbases — 42 body and chassis types ★ Full-floating rear axles in all trucks — ring gear thrust plate ★ ¾-floating axle in Commercial Cars ★ Straddle-mounted driving pinion ★ Big hydraulic brakes ★ Two-speed axle as well as reinforced frame in trucks for heavy-duty service are optional at extra cost.

Ford Motor Company, builders of Ford V-8 and Mercury Cars, Ford Trucks, Commercial Cars, Station Wagons and Transit Buses

FOR '41 PUT A FORD TO WORK!



158" Stake
Dual wheels and tires at extra cost

112" Pick-Up

134" Tractor with Semi-trailer
Dual wheels and tires at extra cost

112" Sedan Delivery

HALL ABOVE ALL

ABOVE ALL in precision, finish and ease of operation, it enables you to do a better service job; one that keeps vehicles on the job longer between valve grinds.

ABOVE ALL in operating economy and the speedy grinding of seats of any metal. It cuts service costs and materially lowers maintenance costs.

ABOVE ALL for your toughest service requirements — not for just today but for one, two or even five years hence.

ABOVE ALL, see this equipment at your Jobber's or write the factory today for complete information.

THE HALL MANUFACTURING COMPANY
1620 WOODLAND AVENUE • TOLEDO, OHIO

HALL
SYNCHRONIZED VALVE SERVICING EQUIPMENT

American Brakeblok Lining Makes Any Route Cheaper and *Safer*

● Top payloads and fast all-weather schedules put your brake maintenance on the spot. A loaded truck off the road . . . a few over-due deliveries . . . and drivers and brass hats both start growling. That's why you need a *tough* brake lining—American Brakeblok lining with the wire-mesh backing that gives you more miles of safer stops and keeps you "on top" in your shop.

This wire-mesh backing enables American Brakeblok lining to take punishment without shifting or weakening—provides firmer anchorage to the shoe—permits such deep-sunk rivets that you get extra thickness of *usable* lining. That's a help on any cost sheet, and makes the record of "mileage-before-replacement" look a lot better.

* * *

All of which adds up in any maintenance man's language to an immediate test installation on the worst trouble-maker in your fleet. Order American Brakeblok lining. *You'll like it!*

AMERICAN BRAKEBLOK DIVISION OF THE AMERICAN BRAKE SHOE & FOUNDRY COMPANY • DETROIT, MICHIGAN

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American Brakeblok

REG. U. S. PAT. OFF.

BRAKE LINING

AMERICAN BRAKEBLOK

MORE MILES OF SAFER STOPS PER DOLLAR

Save with Safety

OAKITE CLEANING MATERIALS AND METHODS SAVE TIME MONEY AND EFFORT ON ALL MAINTENANCE JOBS

For Example: CLEANING OIL FILTERS SAFELY, AT LOW COST

How do you clean oil filters? Is it a tough job? Would you like to know an effective yet simple method that is saving considerable time and money for more and more truck fleet maintenance superintendents?

Then try this! Make up a solution of Oakite Composition No. 7 and kerosene in your cleaning tank, or in an ordinary 50-gallon steel drum. Allow filters to soak for recommended period, then rinse with high pressure hose and blow off with air. Oil, dirt and grime are thoroughly removed . . . at a cost that any fleet superintendent would welcome!

This Oakite material also provides fast, effective results in cleaning rocker arms, fuel pumps, carburetor and other engine parts before repair, thereby giving you additional cleaning economy. And equally important, of course, you "Save with Safety". For like other Oakite materials, Oakite Composition No. 7 is safe to work with, easy to handle and use.

GET THIS FREE BOOKLET

Helpful tips on how to "Save with Safety" on such other jobs as washing trucks before repainting or for regular maintenance, cleaning motors and chassis, cleaning cooling systems, etc., are given in FREE 36-page booklet. Write for your copy today!

NATION-WIDE SERVICE ON THESE JOBS

Washing painted and lacquered truck bodies

Cleaning motors and repair parts

Cleaning radiators and water jackets of motors

Disinfecting and deodorizing food truck interiors

Cleaning service station and garage floors

OAKITE Certified CLEANING

Manufactured only by
OAKITE PRODUCTS, INC., 52G THAMES STREET, NEW YORK, N. Y.
Representatives in All Principal Cities of the United States and Canada

FLEET OWNER

(Automotive Fleet Headquarters)

Charter CCA Member

Published Monthly in the interests of Automotive Fleet Owners, who do all or part of their own Service, and devoted to the Better Operation and Maintenance of Truck, Trailer, Bus, Passenger Car, Taxicab and all Automotive Fleets.

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To stop this *WASTE*—

we've developed a truly modern truck tire that puts more rubber where you need it on 1940 roads—

The New Hi-Miler

IF you operate a truck in general highway service, you'll check on this:

When tires wear bald there's a lot of unused rubber left around the shoulders—wasted rubber you paid for that didn't pay you back!

That's because today's flat, smooth, wide-curved roads don't give tire shoulders much work—the wear's all in the tread center.

And as usual Goodyear leads with the answer. After months of research and testing we're ready with an entirely new type of truck tire designed for modern highways—a tire so standout in long-distance performance it is justly called the HI-MILER.

In the new HI-MILER we get this mileage step-up by slimming down the shoulders and putting more rubber in the load-carrying tread center. This gives us a 12% to 15% thicker tread—*the deepest non-skid tread ever built on a general purpose tire* — without any increase in weight.

Because it puts more usable tread rubber under the load, the HI-MILER delivers mileage comparable to premium-priced tires. Yet you pay no premium for it.

This great new long-distance carrier is made with two types of tread: Full Rib and All-Weather to meet your traction needs. Why be satisfied with conventional tires, when these modern premium-mileage HI-MILERS cost no more? Get them at your Goodyear dealer's—specify them on new trucks.

HERE'S WHAT YOU GET IN STEPPED-UP PERFORMANCE

Longer mileage from 12% to 15% thicker tread center

More efficient wear because of higher percentage of rubber in load-carrying area

Plus these time-proved Goodyear advantages

Greater protection from heat and fatigue due to use of lighter, stronger, low stretch Supertwist cord

Greater adherence between tread and carcass due to new stronger "multiple compound" bonding

Highest resistance to cutting, chipping and cracking from use of toughest tread compound

Made in two types
..for all general on-highway service
HI-MILER ALL-WEATHER center traction tread
HI-MILER FULL RIB smooth-rolling tread

Hi-Miler, All-Weather, Supertwist—T. M.'s The Goodyear Tire & Rubber Company

THE GREATEST NAME IN RUBBER

GOODYEAR

MORE TONS ARE HAULED ON GOODYEAR TRUCK TIRES THAN ON ANY OTHER KIND

SKF *assures*

COAST-TO-COAST *SERVICE*

through CONVENIENT DISTRIBUTORS

Not only are SKF Ball and Roller Bearings used on NEW Brockway trucks, but for replacement on USED Brockways, too.

BUILT BY BROCKWAY MOTORS, INC.

ON TRUCKS built for profitable performance, fleet owners depend not only upon the quality of SKF Bearings, but upon the country-wide SKF service organization.

For SKF keeps a distributor near you, and each distributor can easily provide all standard SAE annular ball bearings and many special types and sizes.

And that means PLENTY in "saved time" and labor costs. Write us today for the address of your nearest source of supply.

4641

SKF

BALL & ROLLER BEARINGS

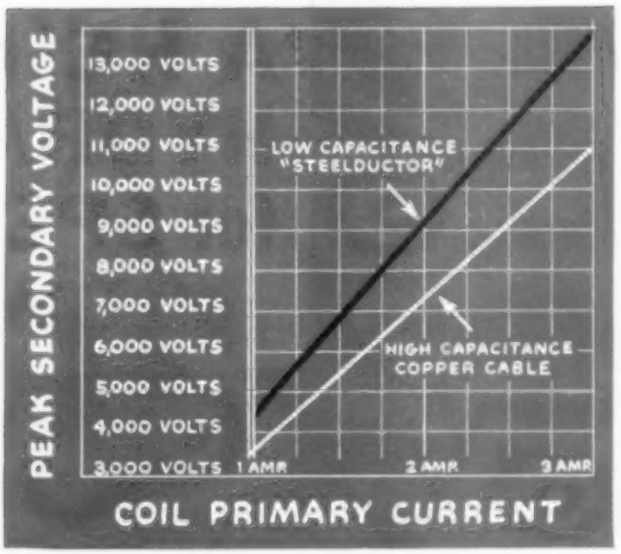
SKF INDUSTRIES, INC., FRONT ST. & ERIE AVE., PHILA., PA

When Cold Weather Lowers Battery Voltage

Sterling Steelductor

REG. U. S. PAT. OFF. U. S. PAT. NOS. 2,088,619 2,151,715

IGNITION CABLE



YOU CAN READ THIS CHART TWO WAYS— (1) Steelductor produces 25% *higher* peak secondary voltages than copper conductor cable on the same primary coil current; or (2) Steelductor produces the same peak secondary voltage on *lower* primary coil current. You win, either way . . . The chart is based on an average spark plug wire shielded circuit, four feet long, from coil through distributor to plugs.

Takes Up the Slack!

● When freezing weather strikes, battery voltages drop with the thermometer. You can't prevent *that*. But you *can* re-wire your motors with Sterling Steelductor Ignition Cable, so that a greater proportion of available voltage is delivered *at the spark plugs*.

Sterling Steelductor has revolutionized ideas of ignition cable efficiency. Wherever spark plug wires are held in place by metal conduits or guides, this new-type cable with its 7-strand stainless steel conductor actually delivers higher voltages to the spark plugs than copper conductor cable. This means surer starting when engines are stiff with cold and battery voltage is at low ebb. And under every condition it means more efficient ignition performance. Fleet records give ample evidence of Steelductor superiority, and the Steelductor Demonstrator (which your jobber can show you) lets you see with your own eyes, the difference between Steelductor and copper conductor cables.

See your nearest Sterling jobber, or write us, to arrange a demonstration of Sterling Steelductor on your own fleet units. Do it now—because you'll *want* the extra protection that Sterling Steelductor gives you against cold weather failures.

The ELECTRIC Auto-Lite COMPANY

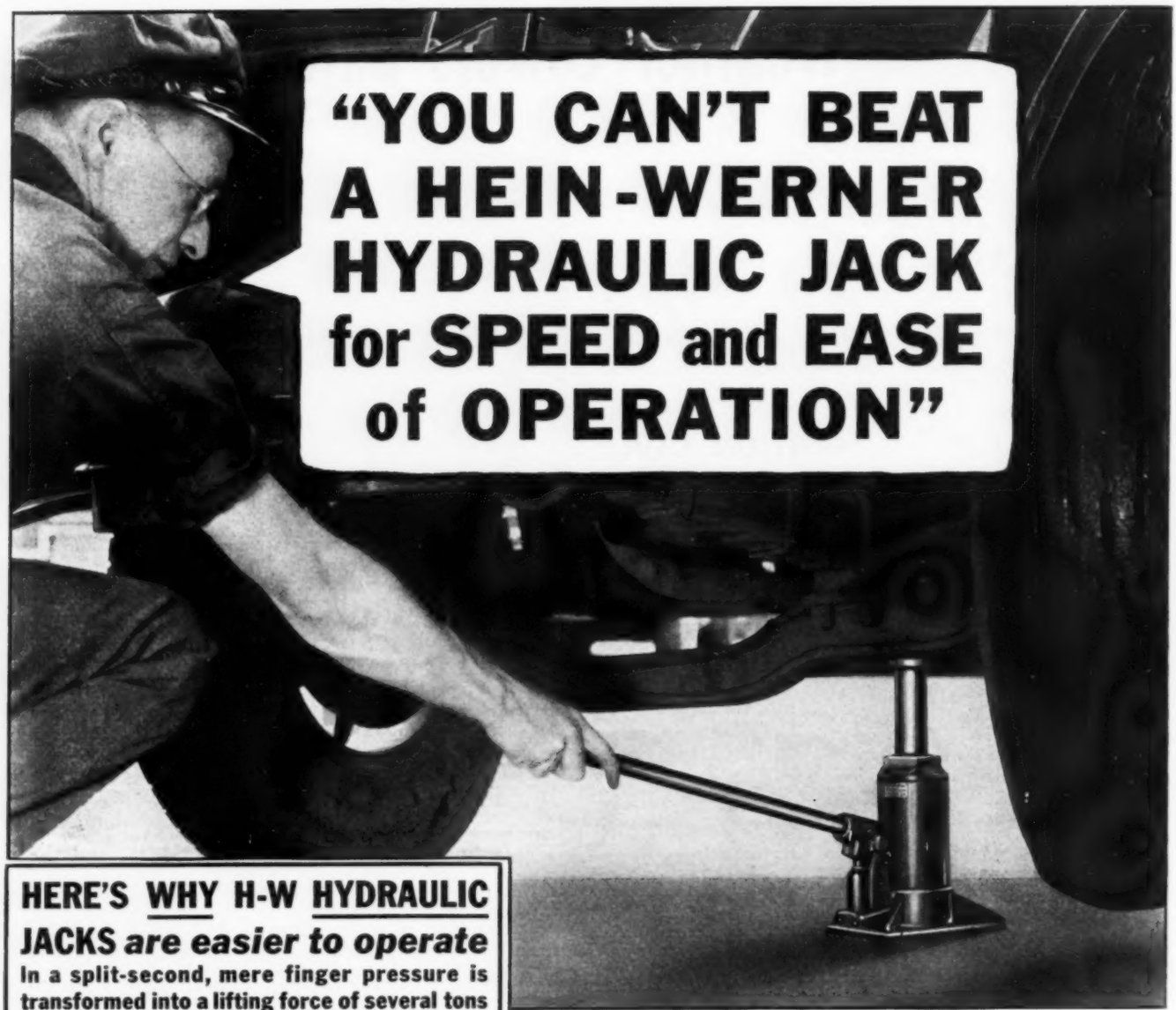
WIRE DIVISION (AL) *PORT HURON, MICH.*

Sets with wires cut to proper length, complete with terminals and nipples, are convenient for fleets with uniform equipment.

Where spark plug wires are held in place by metal conduits or guides, Sterling Steelductor Ignition Cable assures—

- **easier starting**
- **higher engine speeds**
- **less burning of spark plug electrodes**
- **less burning of points**
- **less misfiring from fouled plugs**
- **increased gas mileage**

Kits include terminals, nipples, couplings, sleeves, and Rajah crimping tool. Simplify installation on all types of motors



HERE'S WHY H-W HYDRAULIC JACKS *are easier to operate*

In a split-second, mere finger pressure is transformed into a lifting force of several tons

1. Exert a 2 lb. pressure on the end of jack handle "A".
2. This causes a 50 lb. downward pressure on piston "C" when "A" is 25 times as long as "B".
3. ... Which becomes a 2½ ton *upward* force on the ram, since the lower surface of the ram has 100 times the area of pump piston "C".

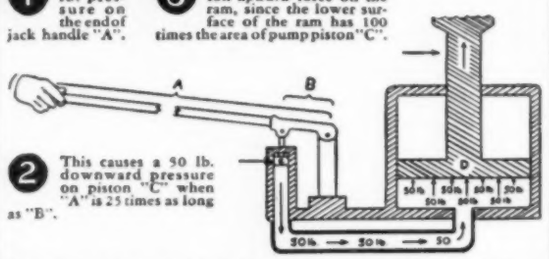


Diagram above shows basic principles of Hein-Werner Hydraulic Jack Power

AS LOW as $2.80

"The perfected hydraulic unit in a Hein-Werner Jack sure is a world-beater ... No truck should be without one of these safe, easy operating hydraulic jacks."

Truck drivers are loud in their praise of H-W Jacks, and if you haven't used one, we hope you'll immediately ask your jobber for a demonstration. You'll be amazed how quickly you can raise heavy loads with the greatest of ease.

Hein-Werner makes a complete line. The H-W 1½ ton capacity hydraulic jack is only $2.80 ... 2 ton model, $2.95 ... 3 ton model, $6.95 ... 5 ton, $8.95 ... 8 ton, $11.75 ... 12 ton, $17.50 ... 20 ton, $30.00. (All prices are net to dealer, and slightly higher on West Coast.)

Hein-Werner also makes Bumper-Lift Hydraulic Jacks for passenger cars, and a full line of Service Jacks of 1¼, 1½, 2, 3 and 4 tons capacity. Also SAFE-T's.

NOW'S the time to equip *YOUR* fleet with Hein-Werner Hydraulic Jacks.

For details, ask your jobber or write us

HEIN-WERNER MOTOR PARTS CORP.
Waukesha, Wisconsin

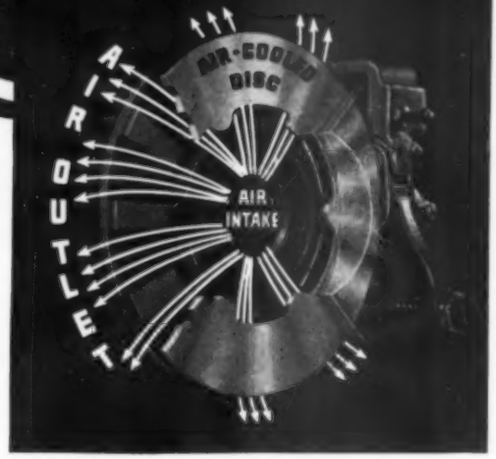
HEIN-WERNER hydraulic JACKS

★ THEY PLAY THEIR FULL PART IN PREPAREDNESS !..

★ When you equip your fleet with **TRU-STOP *Emergency* BRAKES** you take another step that helps maintain schedules—and cuts down lay-ups for brake service.

The performance you will get with TRU-STOP BRAKES is due chiefly to the ventilated discs that throw off destructive braking heat. That's why drivers can make safe emergency stops time and again; use TRU-STOP continuously to supplement service brakes and for safe control on long grades—*all with great increase in the life of brake lining and decrease in maintenance costs.*

Send particulars about your fleet and learn how TRU-STOPS can be installed on all of them. And when you add new units, insist that they come equipped with **TRU-STOP *Emergency* BRAKES.**



the Ventilated Disc

gives safe, dependable braking to buses and trucks in continual heavy service.

The illustration above shows the principle of the heat dissipating construction used in the Ventilated Discs of TRU-STOP Emergency BRAKES—the principle that results in longer life of brake lining and low maintenance cost.

AMERICAN CABLE DIVISION 12-252 General Motors Bldg., Detroit, Michigan • San Francisco: 630 Third Street

In Business for Your Safety

AMERICAN CHAIN & CABLE COMPANY, Inc.

AUTO-LITE SPARK PLUGS HAVE GONE

98,000 Miles

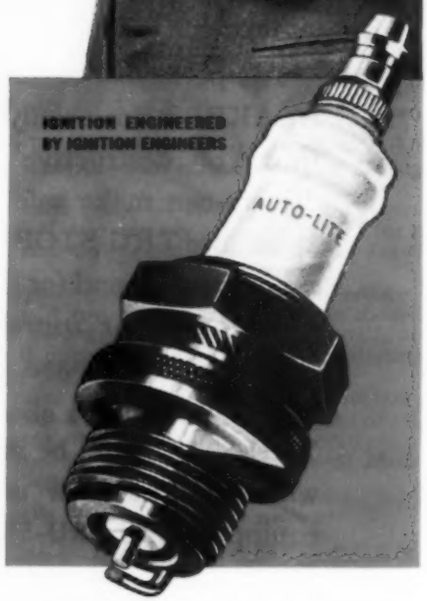
in this one unit

Reports R. I. HESS of Hess Cab Co. Jackson, Ohio

THIS NEW KIND OF SPARK PLUG IS GIVING INCREASED SERVICE AND ECONOMY TO WIN FLEET OWNERS CLEAR ACROSS AMERICA

"We have been using Auto-Lite Spark Plugs in our cabs for over one and one-half years," Mr. Hess' letter continues, "and have found them more than satisfactory. In one instance, it looks like we are going to have to get a new cab to put under your plugs—we have over 98,000 miles on this unit. We will continue to use Auto-Lite Plugs in our operations."

Two amazing new developments account for the sensational performance of the new Auto-Lite Spark Plug. The new Auto-Lite Konium electrode, one of the most remarkable spark plug improvements in years, produces an electrical spark with less effort, increases certainty of firing, eases the electrical stress on all ignition units, prolongs their life. And the new "Ziramic" insulator resists heat, electrical and mechanical shock as no other insulator ever has. You owe it to yourself to put Auto-Lite Spark Plugs on test. Find out how this new, better spark plug will help your present equipment to deliver better service, pay bigger dividends.



THE ELECTRIC AUTO-LITE COMPANY
TOLEDO • *Merchandising Division* • OHIO

AUTO-LITE SPARK PLUGS

VOL. 25
NO. 4

FLEET OWNER

OCTOBER
1940

DEVOTED TO THE BETTER OPERATION AND MAINTENANCE OF TRUCK, TRAILER, BUS, TAXICAB, PASSENGER CAR, AND ALL AUTOMOTIVE FLEETS.

Stripping *the* Thread » »

(The Editor's Column)

FOUR-CYLINDER DEMAND

● They laughed when we sat down at our typewriter—and when we sensed a slight essence of a "demand" for 4-cylinder truck engines, back in 1938—they simply howled! . . . All *we* did at that time was to relay the information to you that a certain number of fleet operators seemed partial to the return of the small 4-cylinder truck engine, especially for those light ½, ¾ and 1-tonners used in door-to-door delivery work. . . . At that time we published several letters from fleet men who wanted some "volume producer" to bring out a small 4-cylinder truck engine that would provide the much-mooted economies for this type of fleet operation. . . . We were glad, too, to publish opinions on the *other* side of the fence, the editorial "Phooey on Fours" which appeared in November, 1938, being an outstanding example of this. . . . And now a volume producer (The Ford Motor Company) comes along and provides what they believe will be the answer to this demand. . . . All of this ought to make this humble Editor stick his chest out and say "We told you so!" . . . But we'd rather wait and see what happens next. . . . In this connection it's only fair to point out that there have been small 4-cylinder trucks on the market all the time—and we don't mean the Austin, either. . . . Willys has had one for several years. Some of International Harvester's units have been (and still are) available with 4-cylinder engines optional. Federal, and perhaps a few others have made these offerings from time to time, but still the Ford announcement is front-page news. . . . Elsewhere in this issue you'll find the specifications and data on it. . . . If we have been the least bit instrumental in bringing the demand for fours to the attention of *anyone*, we're pleased.

●

HIGHER COMPRESSION

● Truck engine compression-ratios are getting higher and higher. . . . A lot of constructive work has been done by organizations interested in getting greater efficiency out of every drop of gasoline burned, notably the Ethyl Gasoline Corporation, whose engineers have contributed many interesting articles to this publication, and who have conducted "tune-up" clinics in many parts of the country. . . . One quite tangible result of this effort is indicated in the announcement of the new White "Super-Power" truck engines, which appears elsewhere in this issue. . . . In preparing it for publication, we were duly impressed by the comparatively high compression-ratios used by these new engines. . . . It has not been unusual to note ratios of 6 and more to 1 in engines of relatively small bore. However, when we find a 6.4 ratio on an engine having a 3⅞" bore, with piston displacement of 318 cu. in., it is difficult to refrain from taking another squint at it and asking ourselves whether or not this is the beginning of a "trend". . . . Not that there is any definite connection between the work done by Ethyl's engineers and the White announcement. It may be a coincident, but it's front-page news just the same. . . . At any rate, it is good to feel that the articles which this publication has offered on high compressions, have not been in vain.

5-CENT TAXI. . . . Residents of Maywood, Ill., (that's where Everhot Branders are made) are now riding in a new fleet of Plymouth "taxi-trolleys" that will take them anywhere within town limits for a nickel.

APPROVAL. . . . Cudahy Packing Company, 'tis said, put its stamp of approval on the Studebaker Champion for its fleet by buying some. . . . C. H. Wondries and Geo. D. Keller (Studebaker) seem pleased.

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H. Clay Fischer
Editor

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The Editor's Column » »

(Continued from Page 15)

WARNING:

● A bulletin has recently been issued by the Post Office Department cautioning trucking companies, bus operators and other individuals in the transportation business, against the carrying of letters for anyone, without the payment of U. S. postage. . . . The term "letters" is explained as including any kind of message from the sender to the addressee, unless such a message relates exclusively to some article or shipment being conveyed at the same time. . . . In other words the U. S. Post Office has a legal monopoly on the transportation of letters, and no one has the right to "muscle-in" on Uncle Sam. . . . For a more detailed definition of the ruling, we suggest that you write to the Post Office Department at Washington, D. C., asking for a copy of Form 676.

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NO PEAKS AND VALLEYS?

● No Sir! . . . There are no peaks and valleys in the truck business; in fact the "seasonal" peaks and valleys of *general* business have dwindled steadily in recent years, indicating an increasing tendency toward basic stability, European wars notwithstanding. . . . It has often been said that the truck business can be used as a barometer of general business, which gives us editorial license to make such a perhaps startling statement. . . . Proof, so far as the *truck* business is concerned, (if you want it) can be found in a new and interesting study of truck registration figures for the 10-year period from 1930 through 1939, recently completed by Lee Cosart, director of truck sales for Dodge. . . . The commercial vehicle registration figures in percent of the yearly total by months, for the 10-year period, show that between February and October there is not a single month that accounts for less than 8.3 percent, or more than 10.2 percent of the year's total truck business. . . . Reduced to chart form, the truck registration line for the period is virtually a level line, varying only 1.9 percent, Mr. Cosart points out. . . . If yours is not a "seasonal" business, and you are contemplating the purchase of new vehicle equipment, only waiting for "the right time to buy" it looks as though *any* month is the right one. . . . Gratifying, indeed, is this increasing tendency toward basic stability of all industry; the truck "barometer" is still as good a one as any.

●

CORRUGATED

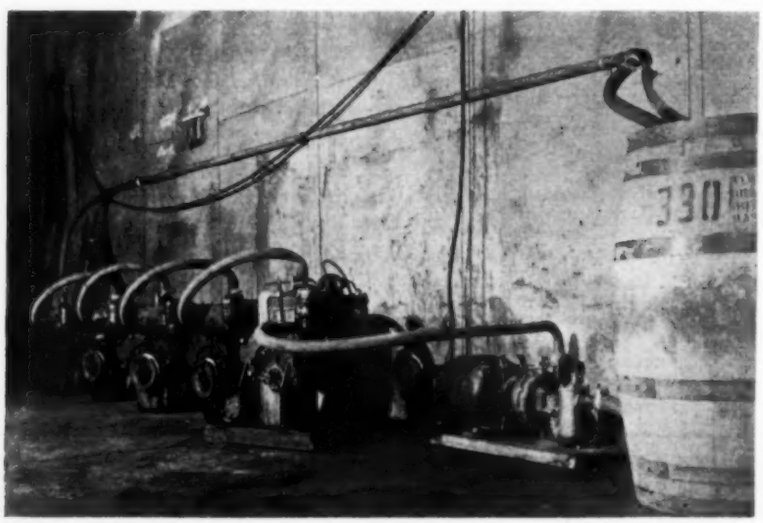
● When the pilot of an army airplane landed on a particular spot in Langley Field some years ago, so the story is told, he didn't realize that the resounding bump was the first indication of a new development that would save thousands of dollars, in the future, for truck operators. . . . Heavy planes landing forcibly on the drain culverts of the airport caused army engineers to search for a stronger and lighter type of metal construction that could withstand landing and bumping strains without crushing. . . . Some of the steel companies had already solved this problem by making culverts of lightweight metal, depending upon corrugated construction for their stiffness. . . . And so, we are told, airplane designers borrowed a leaf from their notebook, and went over to extended-column (or corrugated) design. And so did the box manufacturers, for that matter. . . . Today it is not uncommon to see truck and trailer bodies which feature corrugated sheeting for lightness with strength. . . . An example is seen in the stainless-steel trailers recently announced by Fruehauf. A more recent one is observed in the "outside-frame" construction, offered by Trailmobile.

OVER THE TOP. . . . Dodge truck being used to demonstrate operation of U. S. Army's new motorized equipment at a special training school conducted in Detroit by Chrysler Corporation, in conjunction with the United States War Department.

●

DEFENSE BARRIER

● National defense received somewhat of a setback recently, when the Maryland National Guard and its 300 trucks were told that they would have to pay tolls on the Susquehanna River bridges in Pennsylvania, en route to summer maneuvers in New York State. . . . So the Maryland National Guard officials re-routed the march of their soldiers and saved the tolls. . . . While we are a perfectly law-abiding citizen and have great respect for the system of private enterprise, if *we* were the "captain of the guard" in that instance, we think we'd be inclined to forcibly roll our tanks and trucks across the toll-bridges, in the name of national defense, and let the bridge officials sing for their tolls. . . . But we're *not* the "captain of the guard" and all we can do is write this and stew in our sweat.



SERIES CLEANING. . . . You are looking at five (count 'em) small air-conditioning engines in the process of having their water-jackets cleaned. . . . Of particular interest is the fact that they are connected up "in series". . . . The wooden barrel contains a solution of Oakite Compound No. 32, which is circulated, by electric pump, through all five motors for a period of two hours. . . . After that, they are thoroughly flushed with clear water and the water-jackets are clean. . . . That's all there is to it, according to an article in a recent issue of Oakite News Service—house magazine for the company of the same name. . . . Ask for a copy of their July-August issue, if you'd like all of the details.

IT'S SAFE

IT'S ECONOMICAL

IT'S POWERFUL

IT'S A CONTROL TUNED TO THE TOUGHEST JOB

BENDIX-WESTINGHOUSE GENUINE AIR BRAKES

When you specify genuine Bendix-Westinghouse Air Brakes you have, in one stroke, answered the control problem conclusively and for years to come ★ Safety, economy and power you'll find in abundance plus performance at its best when the going's toughest ★ Don't let another day go by without checking the many exclusive advantages genuine Bendix-Westinghouse Air Brakes hold for you. Write for information.

BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE CO.
PITTSBURGH, PENNSYLVANIA

Genuine
BENDIX-WESTINGHOUSE
AIR BRAKES

Stripping *the* Thread » »

(Continued from Page 16)

TRIPLETS. . . . The girls, not the machines. . . . Marguerite, Frances and Katherine Kirchner, attractive triplets from the Borden Exhibit at the New York World's Fair, try their hands at the machines in the Atlas Press Company's Exhibit in the Hall of Inventions. . . . Celebrating the 150th birthday of the U. S. Patent System, the Hall of Inventions illustrates the beginnings of industrial and technical life in America and includes early working models of devices and machines from which many of today's important industries have been developed.

ICC REQUIREMENT

● Hundreds of thousands of commercial vehicles operated by private carriers in interstate and foreign commerce must be equipped with fire-extinguishers according to the ruling of the Interstate Commerce Commission, which becomes effective on the 15th of this month. . . . To comply with the regulations, the extinguishers must meet the following specifications: *(a) They must be "of a type inspected and labeled by the Underwriters' Laboratories". (b) The Underwriters' label must be marked "Classification B," which indicates the extinguisher is suitable for use on fires in flammable liquids such as gasoline, oil, grease, etc. (c) The extinguisher must be of the anti-freeze type.* . . . The vaporizing-liquid, loaded-stream and carbon-dioxide types of approved extinguishers meet these requirements. . . . Also, extinguishers must be securely mounted in a bracket and must be kept properly filled at all times. . . . Don't say we didn't tell you about it.

●

SHERIFF Goff, of Oklahoma County, uses this Marmon-Herrington all-wheel-drive Ford for chasing desperadoes on roads where the extra traction is appreciated.

HE KNOWS HIS COSTS

● Based on his idea that small business men would make bigger profits if they knew their own operating costs, C. M. Harris, Los Angeles accountant, has built a large business of his own—the well-known traveling "auto offices." . . . Harris carries all

his equipment—desks, typewriters, adding-machines, comptometers and ledger-sheets—in a fleet of light trucks that travel the entire Los Angeles area. He and his employees do the bookkeeping and accounting and maintain all records of some 145 clients whose operations are too small to require their own bookkeeping departments. . . . For example, Harris will start out early in the morning in one of his trucks for a popular restaurant that features thin pancakes and thick steaks. Here he analyzes the food costs of his client and perhaps suggests a way of conserving the profit. . . . Next stop may be a woman's dress shop in Beverly Hills. . . . or a small publicity "factory" in Hollywood. Before the day is over, he may have balanced the budget or figured the income tax for a Chinatown curio vendor. . . . Casting an eye to his own operating cost, Harris proudly claims that his half-ton trucks average nearly 15 miles per gallon in heavy city traffic and have been in constant service for three years with a minimum of mechanical attention. . . . If anyone should know his truck costs, *he* should!

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NEW "TRUCK" MOVIE

● George Raft as Joe Fabrini, the truck driver, keeps things humming in the picture now being exhibited by Warner Brothers, entitled *"They Drive by Night."* . . . With more than six million people making their living out of highway transportation, Warner Brothers have a big potential audience for this picture right in the trucking industry itself. . . . However, like all good pictures, the interest in this one is not confined to any class. It *does* portray some very interesting and dramatic sides to the truck driver's world, which is so vital an element in our present-day civilization, although little understood or appreciated by the average individual. . . .

The way George Raft handles his tractor and big semi-trailer shows that he could just about qualify—if he ever gets tired of being in the movies!

HOW IMPORTANT IS IT TO KEEP THE INSIDE OF YOUR TRUCKS *CLEAN?*

Send 10¢ for this Useful

DOR-TITE GAUGE

Made of Nickel Plated Steel

Gives long and accurate service

How safe from dust, moisture and air currents are the goods carried in your trucks? Perishable goods of any nature—items whose wholesomeness demands absolute cleanliness, such as bakery products, creamery products, meats—items for personal use such as laundry, dry cleaning—ALL can be kept 100% free from exposure by the use of Durkee-Atwood DOR-TITE around the doors. This popular Stripping seals any closure air-tight. Taxi fleets find it indispensable for the rattles and drafts which hard service brings.

Keep DOR-TITE Handy!

Made of extra live sponge rubber, DOR-TITE can be compressed to half its normal thickness, sealing any opening from 9/16 to 5/64 of an inch. For larger leaks, two thicknesses can be laminated. DOR-TITE is reinforced with tough fabric material; there is no stretching, no creeping. The new "DA-50" Superadhesive used makes DOR-TITE hang on for life. Car windows, air ventilators, floor boards, headlight gaskets can all be made to fit closely by the use of DOR-TITE. It comes in many sizes.

DURKEE-ATWOOD

DOR-TITE

10¢ BRINGS USEFUL GAUGE

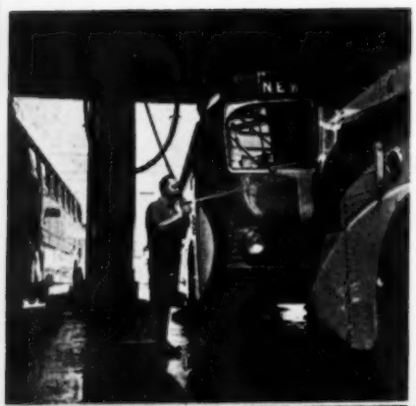
With the DOR-TITE Gauge it's simple now to measure the clearance around truck and cab doors in order to apply the proper size of DOR-TITE. Be sure to mail the coupon today with 10¢ and get yourself this DOR-TITE Gauge. Card accompanying Gauge shows the four most popular sizes of DOR-TITE.

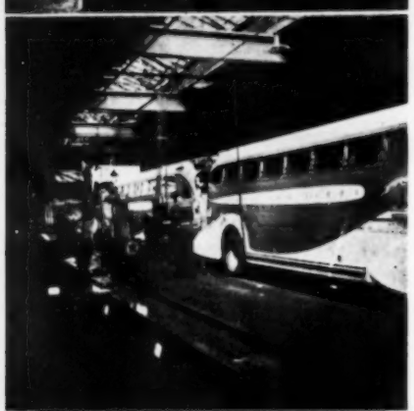
DURKEE-ATWOOD CO.

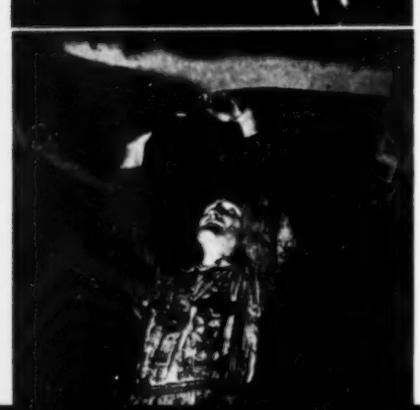
Minneapolis, Minnesota, U. S. A.

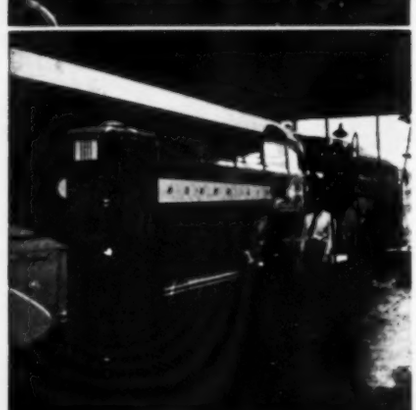
USE THIS COUPON!

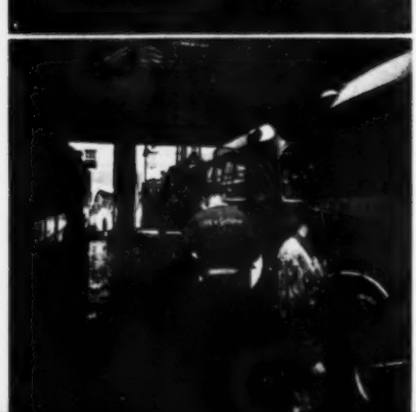
DURKEE-ATWOOD CO., Minneapolis, Minn.
Gentlemen:
Please send me the DOR-TITE GAUGE for the enclosed 10¢. Also prices and sizes of DOR-TITE.
NAME ..... ADDRESS .....

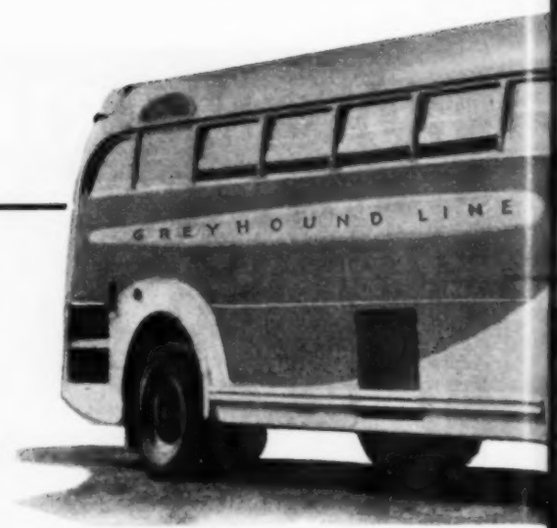












LET'S VISIT THE SHOP, AND

GREYHOUND's

VISIT with us (via these pages) the Long Island Maintenance Garage of Greyhound Lines and witness their Inspection and Preventive Maintenance procedure, which keeps this fleet on the road with practically no breakdowns.

THE BUS operator, like every other company that sells transportation to the public, whether it be boat, railroad or air line, has found that maintenance is an essential part of his problem. An outstanding example is The Greyhound Management system with over 1,000 buses and key maintenance garages at St. Louis, Chicago, Cleveland, Detroit, Pittsburgh, Syracuse, Buffalo, Washington, D. C., Philadelphia, New York and Boston. Storage and routine maintenance units are also maintained at Scranton, Rochester, Indianapolis, Cincinnati and other points.

Haphazard maintenance methods passed out of the picture at Greyhound a number of years ago and today a record of each bus is kept with a case-history card, much like that used for a patient in a hospital. After the bus has been returned to the garage, this card is checked and any comments on bus conditions by the driver are investigated.

The old idea of waiting until something breaks before repairs are made, is now antiquated at Greyhound, who has found that it is less expensive to follow a definite repair program, since road failures and road repairs are costly, not only in hours of labor but in the loss of reputation with the revenue-producing passenger.

The maintaining of the coaches, coming under the jurisdiction of the Maintenance Department of the Greyhound Management Company, requires the services of from 650 to 700 men. This includes mechanics, body-

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LEARN, FIRST-HAND, ABOUT

MAINTENANCE

Through the Courtesy of
Wm. A. Duvall,
Director of Maintenance,
Greyhound Management Company,
Cleveland, Ohio

men, electricians, welders, sheet-metal workers, battery-men, painters, washers, cleaners, clerks, store-keepers, foremen, etc.

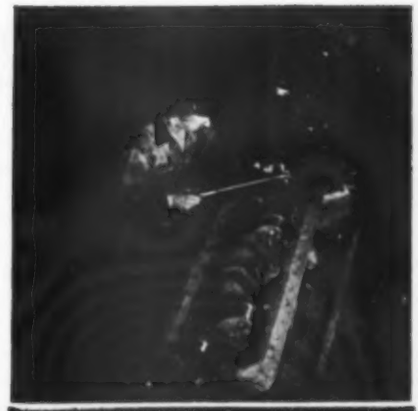
Through the courtesy of William A. Duvall, Director of Maintenance of the Greyhound Lines, and with the cooperation of Mr. B. Parks who is Manager of the Line's Long Island Maintenance Garage, which has a capacity for 200 buses, an inspection was recently made of these operations, and the accompanying illustrations offer a vivid picture of the work that is done to properly maintain a Greyhound bus and thus assure the safety and comfort of their passengers.

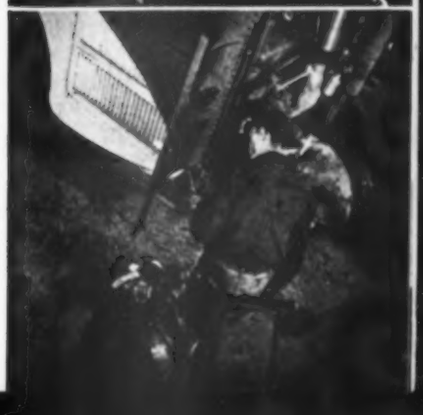
Let us take a quick trip through this Greyhound maintenance shop, studying the accompanying illustrations as we go. The order in which the various operations are described is just about the order in which they are performed at Greyhound. Likewise the pictures are placed in that order.

The first maintenance operation is done after discharging passengers at the end of each run, when each vehicle is driven to the shop. There they enter one of two inspection lines, as shown in the first picture, and are washed with streams of water from high-pressure pumps.

Leaving the wash-rack, the bus moves along the line for body inspection. At this point it is closely scrutinized for any scratches, dents or other defects which might detract from its surface appearance.

(*Please turn to page* 54)





A "Fleet Owner" Survey on Generator Maintenance

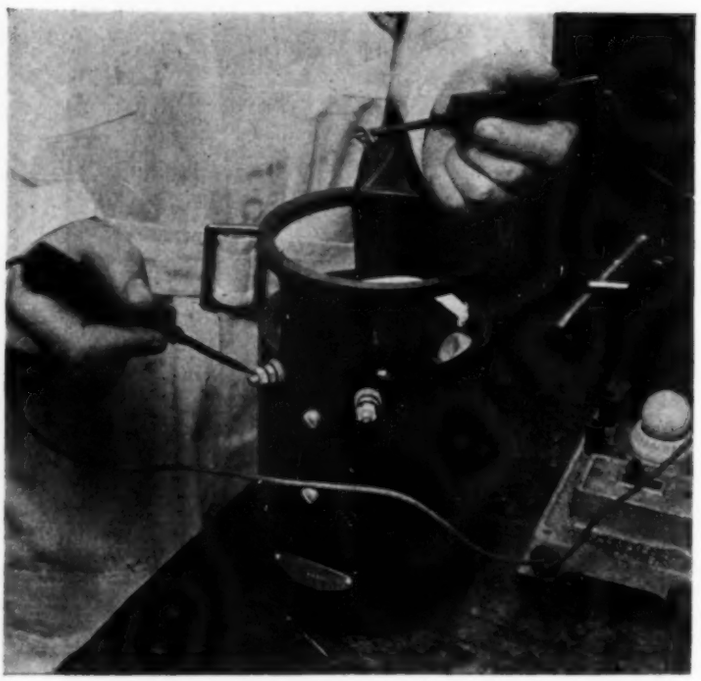
255 FLEETS' EXPERIENCES WITH

GENERATORS

By H. Clay Fischer, Editor

"GENERATORS furnished as standard equipment on trucks are not entirely satisfactory, so far as meeting the needs of fleet men is concerned. Something ought to be done about it". . . . In so many words, more than half (131 out of 255) of the operators participating in our recent survey on Generator Maintenance expressed themselves as voting for "something different" in the way of generator equipment on new vehicles. In fact, almost all of these dissatisfied fleet men are choosing special generator equipment when they buy new trucks and other vehicle equipment.

It's not so difficult. If you will refer back to our article entitled *"Selecting the Generator"* which appeared on page 32 of the April issue of this publication, you will see how easy it is to pick the right *type* of generator for each vehicle, basing your choice on the character of service in which the truck will be used, i.e., slow-speed, high - speed, multi-stop, etc. The truck manufacturers are not lax in this respect; they furnish a generator which, from past experience, fits *average* needs. In fleet work, especially, most needs are *not* average; that's where special generator equipment fits into the picture. So, when buying your next truck, call in your electrical equipment distributor (if your truck dealer does not stock a complete line of generators) and get the *right* generator for the job. So much for that.



Altogether, we received 255 replies to our Question No. 108 —Generator Maintenance, which appeared last May. Because of our discontinuing this department during the summer months, we are only now getting around to a resumption of the articles covering previous surveys. As is our usual custom, we have drawn several outstanding conclusions in making this survey. Here they are, for your convenience:

(1) That most fleet operators do all minor generator repair work in their own shops, farming-out the complete overhauls, exchanges, etc., to specialists; less than one-third of the operators reporting do all generator work in their own shops. (2) That brushes seem to demand the most attention and cause the most trouble. (3) That standard-equipment generators, for the most part, do not meet all fleet requirements. (4) That special generator equipment is specified on new vehicles by a great number of fleet men. (5) That generators without voltage-regulators give more trouble than generators having regulators. (6) That voltage-regulators tend to lengthen battery life and are quite necessary.

And here is a "blow-by-blow" description of the survey. The first question asked, *"Where do you have your generator work done?"* . . . Eighty fleets report doing all of their own generator work in their own shops. Minor jobs only, are done in the shops of 103 fleets; while 72 fleet operators farm-out all generator work. Which should give you a pretty good picture as to which practice is best for you to follow.

Next we asked, *"Do you have a generator test-stand or similar equipment?"* . . . Due to the fact that most fleets are equipped with separate test instruments, such as volt-meters, ammeters, growler, etc., and also because most fleets do *not* do major generator work, the answers were not very high in favor of a complete test-stand. Only 78 fleets are equipped with anything that looks like a generator test - stand set - up. When it is recalled that 80 fleets reported doing *all* generator work in their own shops, the figure of 78 can't be so screwy.

Our idea of a generator test stand is one that has facilities for driving the generator at typical charging speeds. It should have a growler for testing armatures, with its test-leads for checking field-coils; and it should be equipped with a tachometer and the necessary meters. Some test-stands go still further, having attachments for truing-up the commutator and undercutting the mica. . . . Therefore, if you decide to do major generator overhauls, you'll need equipment something on the order of what we have just described. If you only wish to do *minor*

(*Please turn to page* 24)

WE USED TO THINK 7 HOURS WAS FAST TIME FOR THE OAKWOOD TRIP!

Improved gasoline has helped make yesterday's record trip today's regular schedule.

Many of the advancements in engine design which have made practical today's fast schedules and heavy payloads have depended upon improvements in fuel for their success. In particular, the rise in compression ratios, with resulting increases in power and economy, has gone hand-in-hand with the continuous rise in gasoline anti-knock quality.

This year has seen a definite acceleration in the trend toward higher anti-knock levels. The rise has been so rapid that many operators may not be aware of the opportunity it offers for cutting trip times, reducing costs per ton mile and improving performance. Extensive road tests and the practical experience of fleet engineers have shown that there are three ways in which you can take advantage of today's improved gasoline:

1. In older vehicles by installing high compression pistons or cylinder heads (as supplied by the manufacturer) when engines are overhauled or rebuilt.

2. In present vehicles, which have high compression engines, by advancing the spark as far toward maximum efficiency as the improved gasolines will permit.

3. In purchasing new equipment by investigating the compression ratios available and specifying a compression ratio high enough to take full advantage of modern gasoline.

If you have any questions about truck fuels or any special conditions under which your fleet must use them, our fleet engineers may be able to supply you with the necessary information. For just as the Ethyl research laboratories cooperate with refiners to produce better gasoline, so they cooperate with truck manufacturers and operators to help them make the most of this better gasoline.

Ethyl Gasoline Corporation, manufacturer of anti-knock fluids used by oil companies to improve gasoline.

MAY WE SEND YOU THIS FREE BOOKLET? Results of two years of road testing, covering 95,000 miles of operation, showed how operators of commercial vehicles can get more work from today's better gasoline. Details of these extensive road tests, as well as laboratory tests, have been published in a booklet which points the way toward *larger payloads, faster schedules and greater mileage.* This booklet is yours for the asking. Just write to Ethyl Gasoline Corporation, Chrysler Building, New York, N.Y.

* * *

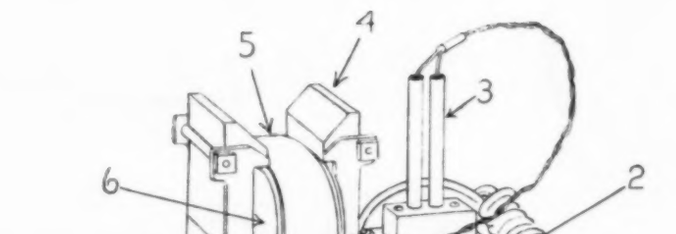
"... the total distance traveled by the test vehicle was 95,000 miles, almost the equivalent of a trip four times around the earth at the Equator."

MAKE BETTER USE OF TODAY'S BETTER GASOLINE!

work, testing, etc., you certainly should have a growler and some meters. A typical growler is illustrated in this article.

So much for equipment. We next asked, *"Which part of the generator gives you the most trouble?"* . . . The answers were as follows: "Brushes"—146; "Voltage-Regulators" — 63; "Commutators" — 49; "Armatures"—48; "Bearings"—31; "Cut-Outs"—17. . . . Some fleet men mentioned more than one, but the answers speak for themselves. Perhaps the great amount of trouble experienced with voltage-regulators is due to lack of proper adjustment and maintenance instructions. We'll try to correct that condition in an article, soon to appear, which will cover voltage-regulator adjustment and maintenance quite thoroughly. We hope that those boys who are having the troubles will watch for it and profit by it.

A great deal of constructive work has been done by this publication on the subject of preventive-maintenance. At some stage of the preventive-maintenance game, generators should come in for their share of inspection, lubrication and adjustment. In answer to the next question, which asked, *"Do you inspect all generators at regular intervals?"*, only 184 fleets replied in the affirmative; 68 said "No"; and 3 did not answer. We *should* be able to report that *all* fleets give their generators some sort of preventive-maintenance attention. Better check yourself on this.



TYPICAL GROWLER. . . . A handy thing to have when testing generator armatures. . . . Numbered for your convenience are these component parts: 1—Extension cord and plug. 2—Push-button switch. 3—Test-points. 4—Laminated core. 5—Covered winding. 6—Winding base. 7—Base casting. 8—Openings to show pilot-light. 9—Hacksaw blade for making tests. . . . Most growlers are built similar to this one. Use your growler to detect all generator troubles.

No doubt the question of *when* to look after generators has bothered a lot of fleet men. Perhaps it is the reason why no attention is given to generators in many fleets, except for the application of a few drops of oil at greasing time and adjustment of the charging-rate, come Spring and Fall. . . . We next asked the question, *"How often do you inspect generators?"* and just to make it hard, some operators answered in time periods; others in mileage periods. . . . The popular mileage periods ranged from 1,000 to 10,000 miles. However, a few operators forget about their generators for as high as 75,000 miles. . . . The popular time periods ranged from "monthly" to "every six months," a few operators letting their generators go for as long as a year, without giving them a good going-over.

Since we had an idea that brushes were going to be listed as giving a lot of trouble, we inserted this question next: *"What is the average life of generator brushes in your fleet?"* . . . Popular averages ranged from 10,000 miles to 50,000 miles. The extremely low and high figures can best be omitted here—yes, there *were* lower and higher ones. . . . Again to make it difficult, some operators gave time figures for the life of generator brushes, popularly ranging from 6 months to 12 months; again we omit the extremes as not being indicative of anything.

Apparently there is a big replacement market in the generator brush business. In answer to the next question, *"What kind of brushes do you use for replacement?"*, the replies were: "Same make as original"—170; "Any standard make"—74; "No answer"—11. On which we won't comment — we stuck *our* neck out once too often.

One way to increase brush life and to obtain the maximum in generator performance is to maintain correct brush - spring tension at all times. We asked next, *"Do you test brush-spring tension?"* . . . Only 77 (out of our 255) fleet operators reported that they do test brush-spring tension. Perhaps that's why most of them are having trouble with brushes?

Next we asked, *"What equipment do you use for testing brush-spring tension?"* and the answers included many trade-marked testers, as well as every-day spring scales, fish-scales, etc. A number of operators compare brush - spring tension with new springs, using the "feel" method, which, to our way of thinking, can't be very accurate, even with an expert mechanic. You might just as well try to guess the weight of a parcel-post package or a steak. It's not good business in either case.

And now we get down to the "meaty" part of this survey. We next asked, *"What type of generators do you get with new equipment?"* . . . The answers were: "Regular equipment"—153; "Special generators"—42; "Both"—60. . . . In almost the same breath, we asked, *"Do standard-equipment generators and regulators meet your needs?"* . . . The answers were "Yes"—124; "Sometimes"—81; "No"—50. . . . We've nothing more to say, having let off steam on this subject in the opening paragraphs of this article. The figures ought to at least prove that we knew what we were talking about, and did not pick our conclusions out of thin air.

In answer to the next question, *"Which gives more trouble, generators with or without regulators?"*, the regulators got a fine endorsement; the answers were:

(*Please turn to page* 56)

BETTERS MILEAGE ABOUT TWO MILES PER GALLON FOR TRUCK OPERATOR

Two miles more per gallon should interest any fleet operator, but that isn't all that interests a Standard Automotive Engineer when he starts checking your fleet. For instance, the Carney Company at Mankato, Minn., where this saving was made, was having bearing trouble. The Standard Automotive Engineer, working with the fleet maintenance men, made the usual thorough tests with his instruments and recommended a change in motor oil. When the work was finished, in addition to the average increase of 2 miles per gallon, they found that these trucks now run over 100,000 miles without any bearing trouble, where previously bearings had failed at 15,000 miles.

There are many ways in which a Standard Automotive Engineer can help you. He can tell you what fuels and lubricants are best for your particular fleet, what causes certain high maintenance items, and from his own experience he can tell you how these recommendations have saved money for other fleets.

HERE'S WHERE YOU'LL FIND YOUR STANDARD AUTOMOTIVE ENGINEER...

Billings, Montana
Chicago, Illinois
Davenport, Iowa
Decatur, Illinois
Denver, Colorado
Des Moines, Iowa
Detroit, Michigan
Duluth, Minnesota
Evansville, Indiana
Fargo, North Dakota
Grand Rapids, Michigan
Green Bay, Wisconsin
Huron, South Dakota
Indianapolis, Indiana
Joliet, Illinois
Kansas City, Missouri
LaCrosse, Wisconsin
Mankato, Minnesota
Mason City, Iowa
Milwaukee, Wisconsin
Minneapolis, Minn.
Peoria, Illinois
Quincy, Illinois
Saginaw, Michigan
St. Joseph, Missouri
St. Louis, Missouri
South Bend, Indiana
Wichita, Kansas

BUS COMPANY SHARPLY REDUCES DRIVE SHAFT BEARING MAINTENANCE

Here is a typical example of how Standard Automotive Engineering Service works. A North Dakota bus company has used this service for the past year and a half. During this time a sludge problem was solved. Periodic tests of combustion efficiency have increased gasoline mileage 16%. Recently the fleet maintenance men and the Engineer tackled the problem of high

maintenance costs on drive-line bearings. When they had finished, bearing expense was reduced 75%.

Remember, this Engineering Service is not offered as a "one time shot" to get you to use Standard Oil products. These engineers are always available to advise you on any fleet problem or help you chase down trouble. Get to know *your* Standard Oil Engineer. His help costs you nothing, may save you much!

WHEEL BEARING LIFE INCREASED FOUR-FOLD IN COUNTY TRUCKS

Wheel bearings in two road oil distributors operated by a Wisconsin county were failing about every 15,000 miles. That was before the maintenance man and the Standard Automotive Engineer got together to find the reason. After inspecting the bearings, the Engineer recommended the right grade of Standard Wheel Bearing grease. The bearings were cleaned and repacked. Now these trucks have gone 60,000 miles without bearing trouble.

Why not have one of these Engineers explain fully just what he does to help make these savings? A card to your local Standard Oil (Indiana) office or to 910 South Michigan Avenue, Chicago, Illinois, will reach the engineer you want. In Nebraska, call or write Standard Oil Company of Nebraska at Omaha. Just say, "We'd like to have your Standard Automotive Engineer call."

STANDARD OIL COMPANY (INDIANA)

AUTOMOTIVE ENGINEERING SERVICE

LOWERS MILEAGE COSTS

MODERN BRAKES

ARTICLE VIII

By J. A. McLaine,
Engineer, American Brakeblok Division, Detroit, Michigan

IN OUR previous articles we described external brakes, Bendix brakes, Lockheed brakes, and Huck brakes. In this article we will discuss the Ford brakes used during the last twelve years.

There was very little change in the Ford brakes during the years 1928 to 1934 inclusive. Figure 11 shows a left front brake which is typical of the type used on these cars. The front brakes are operated by a "V" shaped operating wedge which is pushed down between the two shoes of each front brake. The rear brakes are operated by a turning cam which has a certain amount of floating action.

Brake mechanics have never had much trouble with the action of the rear wheel brakes, but some service men have had considerable difficulty with chattering and groaning of the front wheel brakes. This was not so noticeable on the Model A Ford cars as it was on the 1932, 1933 and 1934 models.

Chatter of the front wheel brakes is often due to the shoes not being properly centralized. Because of the floating action of the cam on the rear wheel brakes there is no trouble, since the shoes can properly centralize themselves. Therefore, various replacement parts manufacturers began to manufacture floating "V"-shaped operating wedges for use in the front wheel brakes of these cars. The floating action of these operating wedges allowed the front wheel brake shoes to properly centralize themselves and thus eliminate front wheel brake noises.

Of course, it is not always desirable to install these floating wedges for the front brakes, and therefore, whatever else can be done must be tried in order to eliminate this trouble.

Some brake mechanics grind 1/16" off each side of the anchor pin bolt, parallel with the king pin. This also allows the operating wedge to float.

The rollers at the bottom of each shoe rest on the "ears" of the brake shoe support which is attached to the backing plate. These "ears" become worn or bent down and this is the principal cause of the improper shoe centralization. If the "ears" are bent down, they may be bent back up, but if they are badly worn, the backing plate should be replaced. It is also possible to purchase oversize roller pins for use at the bottoms of the shoes, in order to raise the shoes. The shoe centralization should be checked with a dummy drum or centering gauge.

If a grinding machine of the type which mounts on the axle is available, it is helpful to use it and grind the shoes in place in the brake assembly to the correct drum radius. The shoe roller pins should always be placed with the cotter pin end away from the backing plate.

It is also possible to eliminate chatter from the front brakes by removing lining from various places on the front wheel brake shoes. Some mechanics take the lining off of the top of the front shoes and the bottom of the rear shoes on the front wheel brakes. Other mechanics simply remove the lining from the bottom of the front shoes in the front wheel brakes. In all cases, however, the lining is only cut back as far as the second row of rivets and then the ends of the lining are well chamfered.

In cases of bad chatter, it is also possible to drill holes in the backing plates of the front wheel brakes, opposite the holes in the shoes, and use hold-down springs, such as those used on Bendix brakes, to hold the shoes more firmly in place.

It will be noted that since the operating mechanism of the brake shown in Figure 11 is at the bottom, the forward acting shoe is the rear shoe and the reverse acting shoe is the front shoe in each brake.

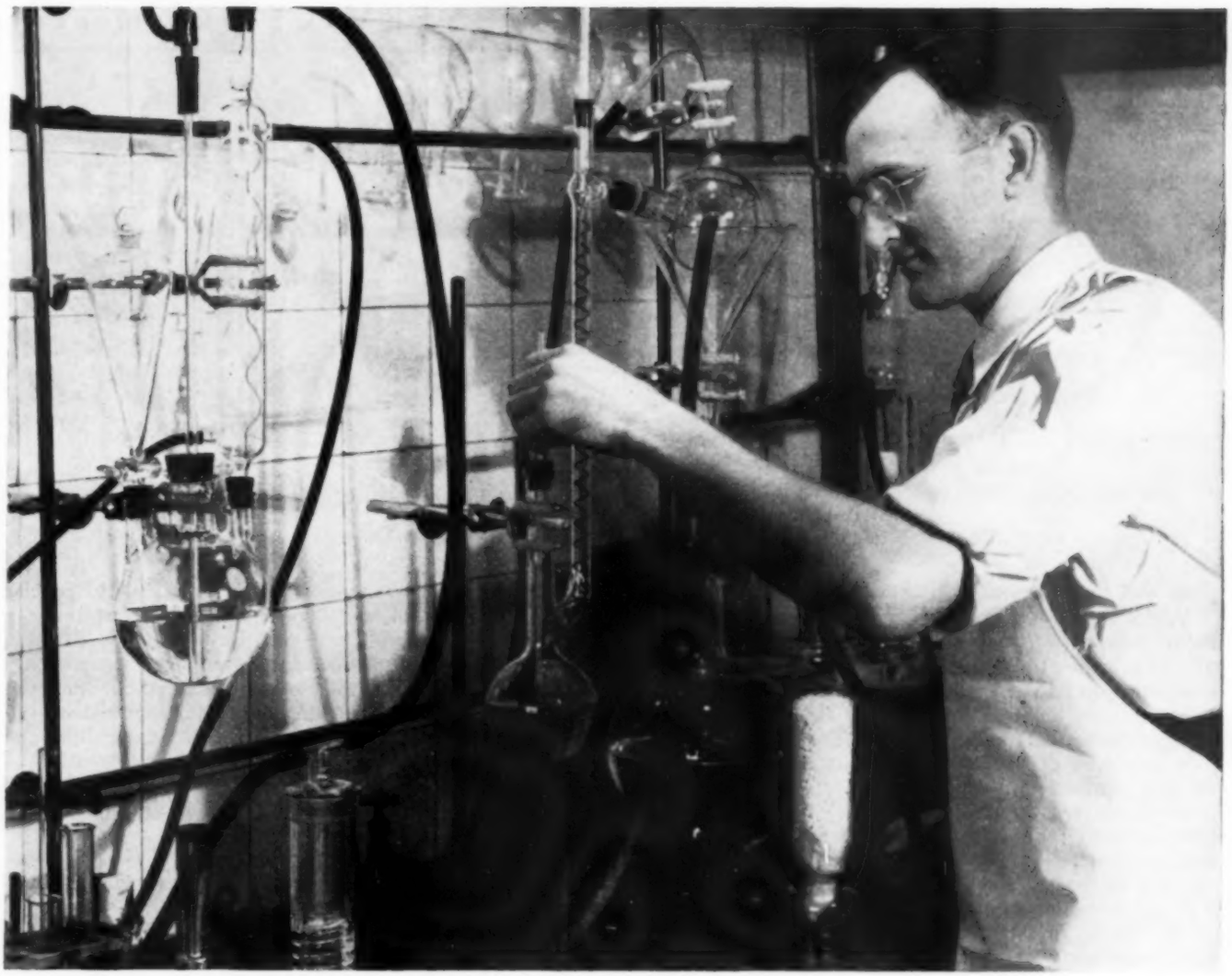
There is no transfer of force from one shoe to another on these brakes and therefore most manufacturers recommend the use of a fairly high friction brake lining on both shoes.

The Model A Ford cars were not very heavy and most of them were equipped with a pressed steel brake drum and for this reason most brake lining manufacturers supply special car sets for these vehicles.

At the top of the front wheel brake shown in Figure 11, we find the adjusting mechanism, which is operated by turning a nut on the back of the brake. On the rear wheel brakes this adjusting nut is more to the side.

Turning this adjustment nut spreads the ends of the shoes farther apart. The adjustment procedure calls for a turning of the nut until there is a slight

(*Please turn to page* 28)



Stretching a Fraction of an Inch to More than 10,000 Miles

A typical example of Goodrich improvement in tires

HIDDEN away in an Akron laboratory are men who are making money for you — because they are saving money for you.

These Goodrich chemists and engineers set out to build a truck tire that would give more mileage for delivery service than any tire ever built. They started to design from the beads up. Just adding more rubber to the tread wouldn't solve the problem because the extra bulk might weaken the tire elsewhere.

But by combining a special Goodrich tread compound, Goodrich Hi-Flex Cotton Cord, a new tread contour, and improved carcass construction, they were able to add 47% to the already heavy tread—a fraction of an inch of rubber that often results in 10,000 miles more service than conventional tires!

This tire is called the Store-Door Silvertown. Goodrich makes it for trucks from ½-ton capacity up. It's tops in city delivery service. And yet the same tire will give amazingly long service on highway runs!

Goodrich research is constantly developing new tires such as this—special truck tires designed to cut your costs. All are Triple Protected against premature failures. All are built with Hi-Flex Cord—a special cord which makes the tire cool-running, even under heavy loads and high speeds. Don't buy truck tires until you've heard the Goodrich story. Remember which, the name's Good*rich*. The B. F. Goodrich Company, Akron, Ohio; Los Angeles, California; Kitchener, Ontario.

Goodrich Silvertowns

FOR TRUCKS AND BUSES

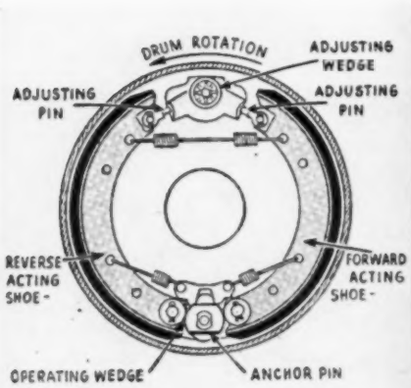


Figure 11
Ford Brake (1932-34)—Left Front

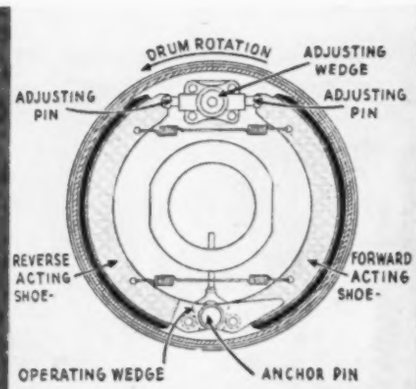


Figure 12
Ford Brake (1935-36)—Left Front

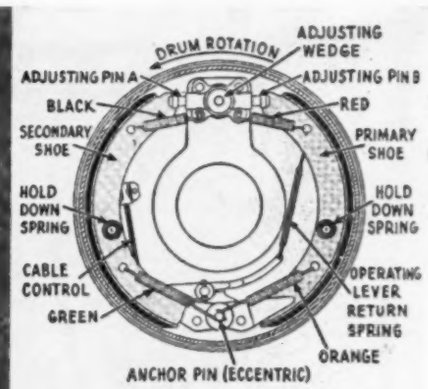


Figure 13
Ford Brake (1937)—Left Front

drag and then backing off the nut to relieve the drag.

Various manufacturers have brought out replacement adjusting mechanisms for these cars which allow each shoe to be adjusted separately. This makes it unnecessary to stop the adjustment procedure while one shoe may be close to the drum and the other shoe quite a distance from the drum. The brake rods are also adjusted at the clevis ends in order to remove all lost motion.

If the levers on the front wheel brakes pull past their centers when the brakes are applied, it is necessary to place washers with convex and concave surfaces between the push rod and the wedge cam. This will raise the push rod so that with the brake applied there will be a 90-degree angle between the lever and the operating rod. This is important on all mechanical systems in order to obtain a soft brake pedal, as explained previously in Article No. 4 of this series.

On 1935 and 1936 Ford cars both the front and the rear wheel brakes are operated by "V" shaped operating wedges. However, both front and rear brake operating wedges have a floating action which assures proper shoe centralization. It will be remembered that in a discussion of earlier Ford brakes, we mentioned that by giving the operating wedge a floating action it was possible to eliminate front wheel brake chatter.

There is a very powerful mechanical leverage hook-up from the brake pedal to the brake assemblies on the 1935 and 1936 Ford cars. In fact, a slight pressure on the brake pedal results in a tremendous pull on the brake rods and an extremely great force pressing the shoes against the brake drums. There is no transfer of force from one shoe to the other, so this very high leverage ratio was used in order to obtain a soft pedal.

However, a tremendous pull on the brake rods causes them to stretch and a great force against the brake drums causes them to go out of shape. The result is that the brake pedal can be pushed completely to the floor without much braking effort.

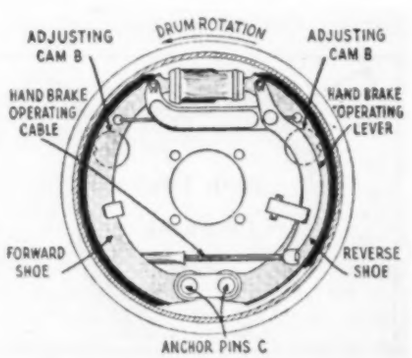


Figure 14
Ford Hydraulic Brake Showing Mechanical Operation of Rear Wheel Brakes for Parking

For this reason, most manufacturers build special car sets for 1935 and 1936 Ford cars, containing a very high-friction brake lining. The use of this high-friction lining makes it necessary to use only slight pressure on the brake pedal, thus reducing the amount of rod stretching and drum distortion. However, on high-speed stops, drum expansion due to heat must always be taken into consideration.

In cases where the brake rods have been stretched, it is often necessary to cut ½" or more off the ends and then rethread them.

There are two types of brake drums used on these cars, namely, the open type and the closed type. The closed type has a solid back and the open type drum has a spider-shaped or spoked back. The closed type drum is much heavier and stronger and resists distortion better than the open type.

It will be noted from Figure 12 that here, too, the forward acting shoe is the rear shoe and the reverse acting shoe is the front shoe in each brake. The rule for determining the forward acting shoe on a Ford brake is just the same as the rule given in Article No. 7 for finding the forward shoe in a Lockheed brake. The forward shoe in a Ford brake is the first shoe we come to when we start at the operating device and move in the direction of forward drum rotation. Here, too, the forward shoe does most of the work of stopping the car when traveling forward, and the reverse shoe does most of the work when the car is moving backward.

The adjusting mechanism is at the top of the brake and the shoe clearances are controlled by turning a nut in same manner as previously described for earlier model Ford brakes.

Various parts manufacturers have brought out replacement adjusting wedges for use on 1935 and 1936 Ford brakes, which produce a floating action at the adjusting ends of the shoes and provide a certain amount of transfer of force from one shoe to the other. When these adjusting wedges giving force transfer are used, the brakes be-

(*Please turn to page* 59)

New 1941 DODGE *Job-Rated* TRUCKS NOW READY!

BIG **MONEY-SAVING NEWS** FOR **TRUCK USERS**

HERE'S WHY THEY'LL CUT YOUR COSTS..

• Yes, *more than ever*, new 1941 Dodge *Job-Rated* trucks are built to fit the job—your job! The chart (at right) tells why.

Then, too . . . they'll save money on your job because of dependable Dodge *quality*—Dodge *quality* that comes from fine materials; Dodge *quality* that endures because of precision manufacturing and workmanship.

Add it all up! Progressive Dodge truck engineering...reliable Dodge *quality*...Dodge low prices. The sum total is *VALUE*...big *value!* See your Dodge dealer now . . . for the best truck you ever owned.

DODGE DIVISION, CHRYSLER CORP., DETROIT, MICHIGAN

A TRUCK THAT FITS YOUR JOB *SAVES YOU MONEY!*

Trucks too small for your job or too large for your job are costly.	Dodge builds 112 standard chassis and body models—one to fit your job.
Trucks that are underpowered or overpowered are wasteful.	Each Dodge *Job-Rated* truck has the *right* one of 6 different truck engines.
Trucks with the *right* sized units throughout last longer on your job . . .	Each Dodge truck has the *right* one of many clutches, transmissions, rear axles, etc.
What you pay for trucks is important . . . but what you get for what you pay is even more important.	Dodge *Job-Rated* Trucks are **PRICED WITH THE LOWEST** for Every Capacity

SEE YOUR DODGE DEALER FOR A GOOD DEAL ON RELIABLE USED TRUCKS, TOO!

DEPEND ON DODGE *Job-Rated* TRUCKS

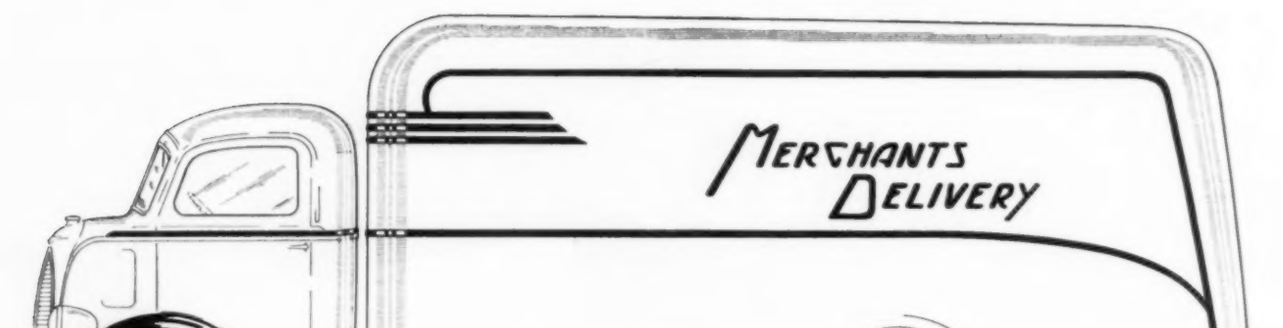
½-¾-1-1½-2-3 TON CAPACITIES . 112 STANDARD CHASSIS AND BODY MODELS ON 18 WHEELBASES . *Job-Rated MEANS A TRUCK THAT FITS YOUR JOB

Fleet Owner

Body Design

By James H. Johnston

Truck Body Designer and Builder
97 N. Washington Ave.,
Columbus, Ohio.



Design No. 2—VAN-BEHIND-CAB

THIS is the second offering in our series of modern truck body designs—an exclusive service presented by this publication for the benefit of anyone building, servicing or using truck bodies.

Since a different body design is created each month, it will be possible to cover 12 vocations per year, so that over a period of time, practically every type of fleet operation will have been served.

The author of these articles and designer of the bodies is a man who has specialized in designing and building custom-built truck bodies for many years. Although he is still in the body business, there are no "strings" attached that would prevent any fleet operator from using these designs and plans, inasmuch as they are now the property of this publication. Permission to use them is automatically granted, upon publication of each article.

It is not possible for this publication to furnish scale-drawings, blue-prints and other architectural data. In anticipation of such requests, the author advises that he may undertake to provide these services, should the demand warrant it. All correspondence, therefore, should be addressed to the author, whose address is given above.—*Editor.*

THE SECOND body design in this new series, illustrated above, is a van body, to be mounted behind a standard-equipment cab, and built separately from it. We have drawn this body design upon a Ford, 158-inch wheelbase, cab-over-engine chassis, endeavoring to adhere to conventional body size, and yet impart good lines and individuality to the body. This body is recommended for light, bulky loads, such as are carried by furniture companies, department stores and package-delivery companies.

Dimensions:—All important dimensions, including loading space, are indicated in the accompanying working drawings on the opposite page. The exterior of this body is 16 feet long, by 8 feet wide. Inside height is about 6 feet at the rear corners, and slightly more than that in the center and at the front end.

Underbody:—The thickness of the floor is governed by the type of load to be carried. The author has indicated flooring 1¼ inches thick on the detailed

drawing. Bolsters, 5 inches high, separate the floor from the chassis frame. The wheelhousing tops are oval, built of 12-gauge body steel.

Front:—The front panel is solid. The type of construction, similar to that of the sides, is shown on the working drawing. If a tail-gate is specified instead of rear doors, as shown, a window should be built into the body directly behind the window in the rear of the cab.

Sides:—Each side is a solid panel the entire length, with cut-outs for the rear wheels. The latter can be finished off flush with fenders or fender-rims, and a removable panel placed in the side fender opening. A bumper or scuff-rail is placed along the bottom edge. The great length of these side panels—running from the upright moulding on each side of the front panel, back to the upright moulding on the side of the rear corners—may necessitate their being made in two parts, unless full 16-foot panels are obtainable. The joint can be finished with solder, as a blind joint; or, it can be covered by an upright moulding.

Roof:—The roof is to be made of exposed metal crown panels. Center panel of roof to be covered with duck, preferably aluminum-finished, laid over a plywood deck.

Rear:—The rear opening is 66 inches wide, 60 inches high, closed by two doors. Each of these doors hinges at the outside and locks at the center. A bumper has been indicated at the rear.

Interior:—The walls are flat and lined with plywood panels; galvanized sheet metal is used at the end upright and roof corners. The ceiling is also faced with plywood panels.

Construction:—As with all closed delivery or van bodies with flat panel surfaces, the choice of panel material is optional. Among the available materials that might be suitable for this body are: 20-gauge, stretcher-leveled autobody sheet; treated stretcher-leveled (high tensile) steel sheet; 16-gauge stretcher-leveled aluminum sheet, etc. Any of these may be used, fastened directly over the wood posts, or backed by plywood panels. Another alternative is to use any of the manufactured metal-faced plywood panel material.

The rounded corners are of sheet metal, of course. Mouldings are 1½ inches wide, preferably of aluminum entirely—or else aluminum for the formed portions, and steel snap-on mouldings for the straight sections.

All structural timber and flooring should be of air-dried oak, securely screwed and bolted together and well ironed. Number 10 or 12 aluminum-treated duck is recommended for the roof center, laid directly over the plywood center panel. Hardware should be of the substantial, truck type for the rear doors, with the exterior handle finished in chrome-plating.

Electrical:—This body should have two dome lights, mounted on the ceiling. Also the standard-equipment chassis stop-and-tail-light should be reset into the left rear corner of the body. Exterior marker-lights recommended are: One amber marker-light set on each outside corner of the front panel, near the top. One amber marker-light set on the front end of each side panel, near the top. Red marker-lights should be used at the upper corners of the rear panel and also at the after-end of the side panels, and a red marker-light should also be placed in the center of each side panel, near the top, as shown in the illustration. Optional lights can be used, of course, to meet local requirements.

An amber reflector should be placed near the bottom front corner of each side panel. Red reflectors should be used at the rear corners of the side panels, and also at each bottom outside corner of the rear panel. As with lights, different reflector set-ups can be used to meet local requirements.

Finish:—The interior of this body should be finished in natural wood—spar varnish preferred, with metal either left bright or enameled. The exterior

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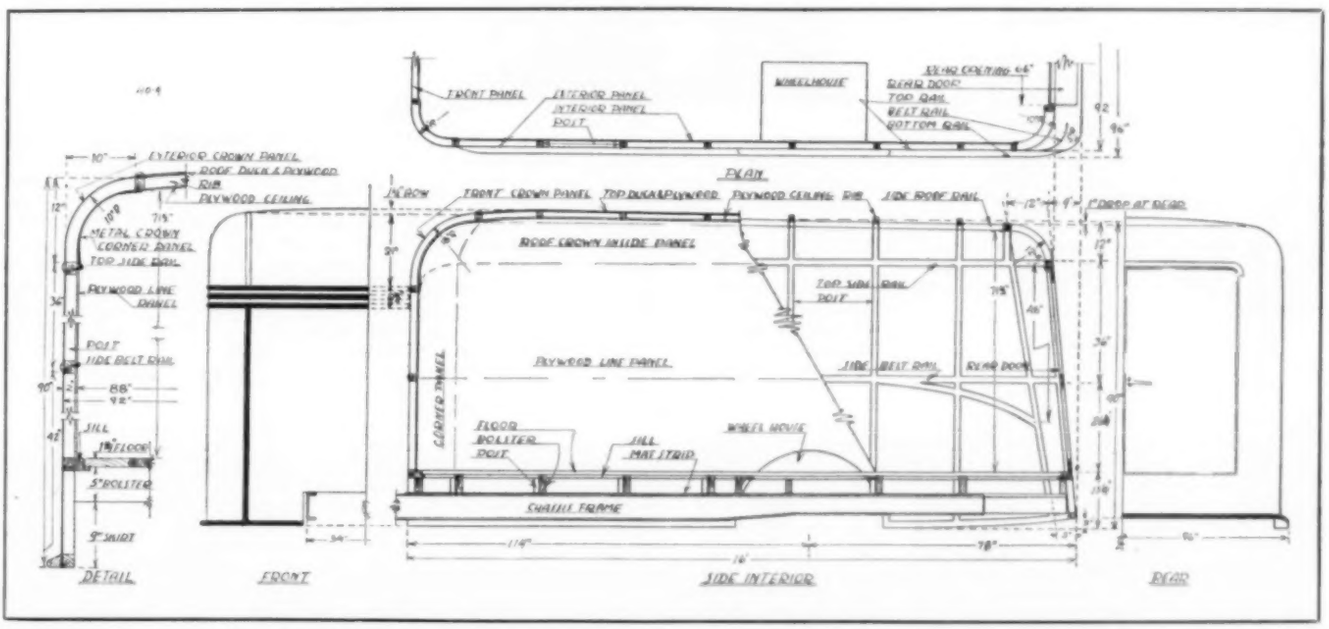
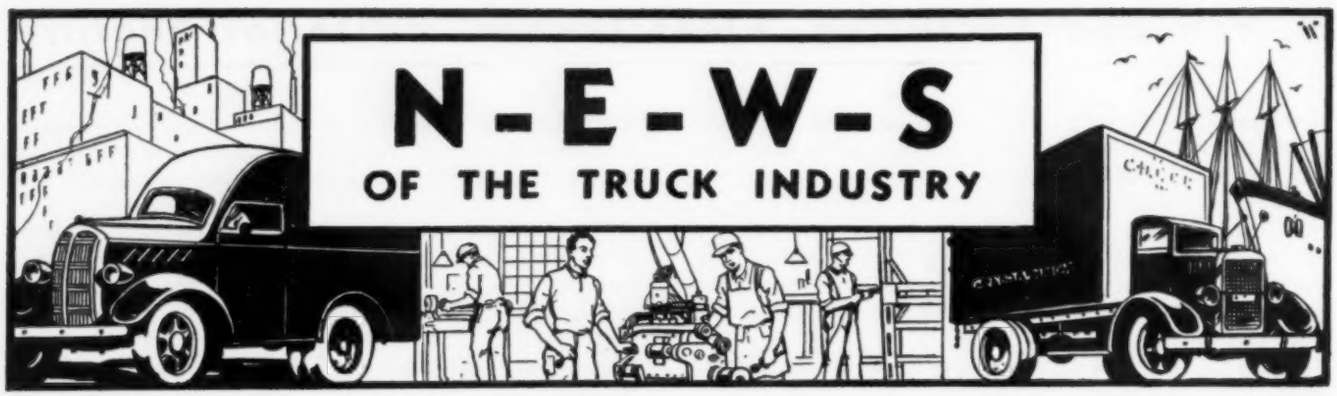


WORKING drawings of FLEET OWNER's Custom Body Design No. 2. . . . Note that all dimensions are given in detail, together with some specifications of materials. . . . Anyone experienced in body building should be able to follow these plans without difficulty.—Editor.



ICC Sets Eastern Truck Fee Schedule

THE I.C.C. last month prescribed minimum rates for highway motor carriers operating in eight middle-Atlantic states, thus placing a "bottom" on the rate structure, below which no carriers will be permitted to operate. . . . The Commission expects this new order to serve to stablize rates in this territory, at a level which should produce revenues necessary to promote adequate and efficient service by the highway carriers.

•

Chevrolet Announces 1941 Truck Models

CHEVROLET'S truck entries in 1941 will comprise a full line of light, medium and heavy-duty models which embody numerous improvements. . . . The truck line spans the truck and school-bus fields, with chasses offered in both conventional and cab-over-engine types. . . . Engine power has been stepped up, from 78 to 90 h.p., without increasing piston displacement. Maximum torque is increased to 174 pounds-feet. . . . Although the new jobs will be in dealers' hands and on the highways from now on, the factory will make its formal truck announcement next month, when the complete story will appear in this publication.

•

Trailer Makers Assn. in New Home

THE TRUCK Trailer Manufacturers Association has established new offices on the 40th and 41st floors of the LaSalle-Wacker Building, 221 N. LaSalle Street, Chicago, Ill. . . . The offices of its publicity counsel, the Lawrence H. Selz Organization, have likewise moved to the same location. . . . The Association was organized several months ago and is developing an educational campaign to promote the interests of motor transport and the truck-trailer industry.

•

FWD Shows Profit for Fiscal Year

A NET PROFIT for the fiscal year ended June 30, 1940, is announced by Four-Wheel-Drive Auto Company, Clintonville, Wis., in the amount of $22,330.74. . . . This compares with a net loss of $122,330.89 for the preceding fiscal year. . . . Walter Olen, president, reports that the current back-log of orders in the FWD factory is higher than at any time in the past three years, and that business for the coming year appears very favorable.

Autocar Gets War Department Orders

THE U. S. War Department has authorized The Autocar Company, Ardmore, Pa., to start quantity production on "half-track" scout cars—an order totalling over seven million dollars. . . . These armored cars are called "half-track" because the rear drive is through a sprocket and idler axle, operating a rubber track on the familiar "caterpillar" principle, while the front axle and wheels are like those of conventional front-drive highway trucks. . . . Plant additions are being provided at Ardmore, so that work on this order will not interfere with normal production of Autocar trucks.

•

"E-Z-Route" Milk Body for Fords

TRANSPORTATION Engineers, Inc., of Detroit, announces a new milk body which they call the *"Brooks E-Z Route."* . . . This unit is built exclusively for Ford truck chasses and features an all-steel body that will accommodate 44 standard milk-cases. . . . Other details include an easily

operated door with hand-lever control; special swivelling driver's seat, controlled by a heel-pedal; ample compartments for driver's books, sweater, cap, etc.; and a special dome-light over the driver's head, for convenience in checking records during the early morning hours. . . . For more details write to Howard Perkins, c/o Transportation Engineers, Inc., 14307 Third Ave., Detroit, Mich., mentioning FLEET OWNER.

•

Penna. Turnpike to Open This Month

THE NEW Harrisburg-Pittsburgh Turnpike was previewed last month by more than 150 prominent persons, including members of Congress, military experts and industrial leaders. . . . The new highway was scheduled for opening on Labor Day, but the opening was postponed, the latest date being set for October 1, as this issue went to press.

Mack Announces New Heavy-Duty Models

AS THIS issue goes to press, Mack Trucks, Inc., announced the production of a new series of truck, tractor and 6-wheel models designed expressly for heavy hauling. . . . Included in the new series are the LF and LJ truck models, the LFT, LHT and LJT tractor models. Six-wheelers are also offered in models LF, LH and LM. . . . Complete details, photos and specifications will appear in our November issue.

•

Trailmobile Trophy Contest Popular

AMERICAN Trucking Associations, Inc., has announced the close of the second year of competition for the Trailmobile Safety Trophy, awarded for safety activities and accomplishments on the highway, and for services rendered to other users of the highway, by fleet operators. . . . The winner of the award this year will again be announced at the A.T.A. Convention in Los Angeles, November 11 to 13, next. . . . The name of the winning fleet is engraved on the trophy, which becomes the permanent possession of any company which wins it three times.

•

Marmon-Herrington Again Expands Plant

A RECENT building program which doubled the capacity of the Marmon-Herrington plant at Indianapolis, Ind., has been completed, and now the Company is starting a further plant expansion of approximately equal magnitude. . . . Additions to the already greatly enlarged truck and tractor assembly plants and to the office building, as well as a new service building, are now under construction. . . . Starting from scratch less than 10 years ago, the Company's plant site now comprises 16 acres of ground, with numerous buildings and private railroad facilities.

•

New Addition to Diamond-T Plant

A NEW $175,000 warehouse is being added to the Diamond-T Motor Car Company's plant in Chicago, Ill. . . . The building, 600 x 120 feet, will be used principally in connection with the recent $3,500,000 government order for six-wheel-drive, extra-heavy-duty trucks awarded to Diamond-T. . . . The new building is of poured concrete construction, with steel sash windows in front and on the sides.

100% USE FOR 4 YEARS... FREQUENT COMPARISON TESTS PROVE

GENERAL CDs DELIVER 60% More Mileage

• Users of General truck tires since 1930, Condon Bros., of Des Moines, Iowa, meat wholesalers delivering ready cut meats in 25 counties were quick to try out the General CD when it was first brought out. Now, after using CDs 100% for four years, they are more certain than ever that it stands head and shoulders over all other tires in performance under the most gruelling conditions. Not satisfied just to use the CD without being certain of the extra service it gives, Condon Bros. have conducted frequent comparison tests with other makes of tires. Invariably these tests have shown that the CD delivers at least 60% more mileage.

General welcomes such comparison tests by users of the CD, because in test after test the results are the same. The CD's entirely new principle of construction gives far greater mileage, amazing puncture resistance, 50 to 100% greater return on the difference you pay. If you haven't yet tried the CD, have your General Tire dealer fit a set to a truck on your toughest run. Give the CDs "the works," check the results, and judge for yourself.

THE GENERAL TIRE & RUBBER COMPANY • AKRON, O.

In Canada: The General Tire & Rubber Company, Ltd., Toronto

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The GENERAL C·D·

AVAILABLE FOR TRUCKS FROM ½ TON TO 10 TONS CAPACITY

AVOID OVER-INFLATION

THE EVILS of under-inflation have been pointed out so many times that little remains to be said. . . . Over-inflation, on the other hand, is equally bad for truck tires. . . . This article, provided by the Rubber Manufacturers Association, tells you just why, and contains some timely advice for anyone who uses modern, high or low pressure truck tires.

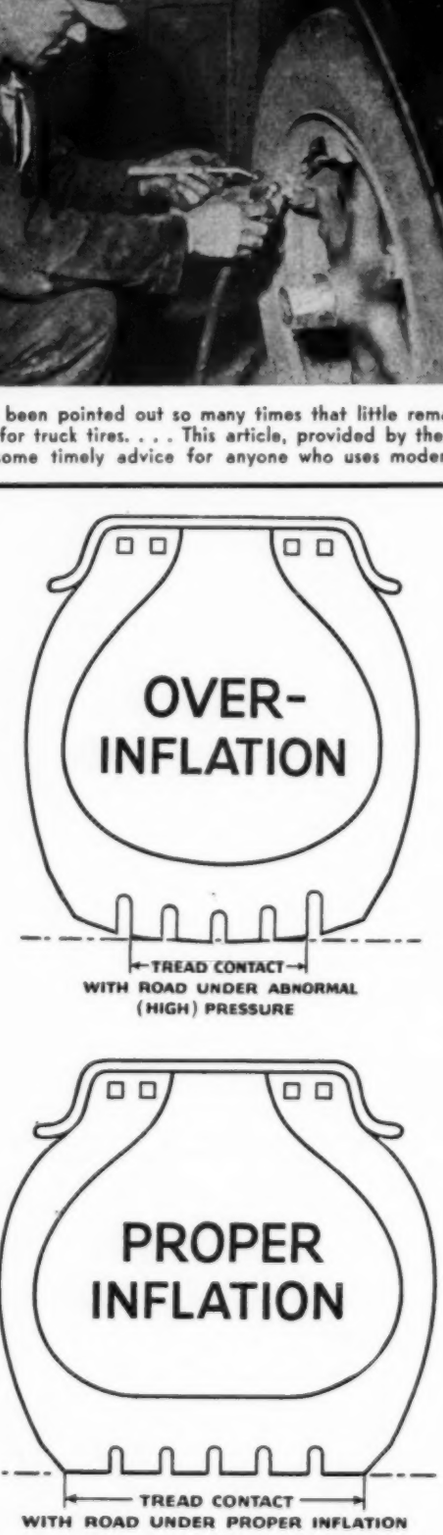
DURING the past several years there has been a gradual swing from high pressure truck tires to balloons. Particularly is this true in high speed, long-haul service, and today very few long-haul operators are using high pressure tires.

Many truck owners, however, are not receiving the full benefits from their balloon equipment because they are continuing to use air pressures more in keeping with high pressure inflation recommendations, and *not* the pressures recommended for balloon tires.

It is well to remember that over-inflation of truck tires will *not* compensate for overloading. Balloon tires are designed to operate at certain recommended inflations which give proper deflection and road contact. If the deflection is changed from normal, either by over-inflation, overload or a combination of both, satisfactory service cannot be obtained.

High pressure tires do not perform as well as balloon tires in high speed service where heat is a factor, but those truck owners who use high pressure inflation recommendations in balloon tires are defeating the purpose of the balloon tire at considerable expense to themselves.

For example, some truck owners are attempting to compensate for overloads of 33⅓% and 50% by increasing the air pressures in the same ratio. As applied to a 9.75-20 installation, this would mean 23 to 35 pounds more air pressure than recommended.



AVOID over-inflation, which "crowns" the tire and reduces the area of contact with the road. . . . These two cross-sections of typical, modern truck tires, should be self-explanatory.

Other truck owners firmly believe that air pressures higher than recommended are necessary, because they find air pressures "build up" in service. A certain amount of air pressure "build up" is normal in high speed service, but if the pressure increases more than 16 pounds with atmospheric temperature of 100°, then the proper solution is *not* higher pressures when tires are cool, but the *next larger* size tire.

The temperature in a tire which has built up 16 pounds in service can be approximately arrived at as follows: 16 pounds x 8½ + atmospheric temperature = Amount of temperature within the tire.

Thus, if atmospheric temperature is 100°, the temperature within the tire will be approximately 236°.

It should also be remembered that crowned roads will cause a variation in air-pressure and will set up a different set of conditions than on flat, concrete roads.

When tires are operated on crowned roads, the air pressure "build up" will be greater in the inside dual than in the outside dual. In such cases it is necessary to adjust the air pressures, when cool, of the outside and inside duals, to help equalize the load over all four tires.

In addition to heat generated by flexing due to overload on crowned roads, the inside tire will increase in pressure, due to transfer of heat from the brake drum.

It is impossible to furnish a definite guide as to the variation in air pressure necessary to take care of crowned road conditions, because this will vary with the size tire used and the type of road over which the vehicle is operated.

This can be determined by experimentation, however, and when the correct variation in air pressure is found, the "build up" will be the same in both inside and outside dual. Normal variation in air pressure is from 5 to 12 pounds, and it is not generally recommended that this variation be exceeded.

If excessive air pressure "build up" is experienced, load analysis is necessary to determine proper size and type tire needed.

To determine tire loads accurately, actually weigh, first the front axle and then the rear axle, of the loaded vehicle on a platform scale. (Be sure the approach to the scale is level for a sufficient distance to get accurate distribution of weight.)

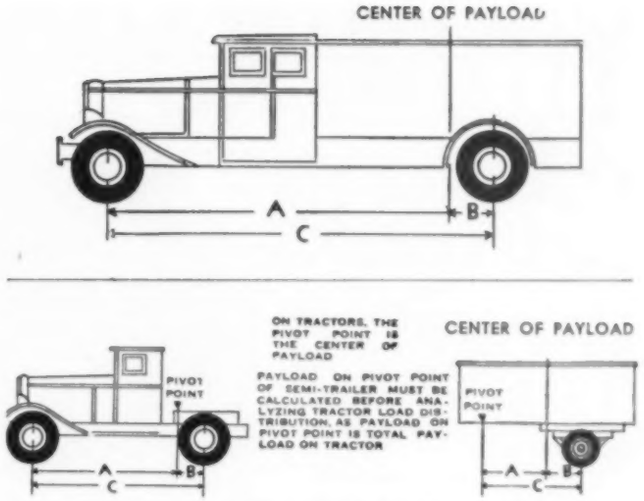
If a platform scale is not available, *approximate* axle loads may be obtained, providing the weight of the empty vehicle is known and the way in which the empty weight is distributed between the front and rear axle. To the empty weight per axle is then added the amount of payload which is carried on each axle.

This may be determined by the formula which accompanies the three truck sketches appearing on this page. It will also be well to consult any of the standard "Load and Inflation Tables," which show the loads which each specific tire size is capable of carrying, at various inflation pressures.

These tables are well standardized, and can be obtained from any of the major tire manufacturers, without charge. You will generally find them printed in the popular "Truck Tire Handbooks" as issued gratis by some of the major tire companies.

The effects of load and speed on tire service are also important. The greater the load, the greater the heat generated inside of a tire. The greater the speed, the greater the heat (air pressure "build up" is caused by heat). The combination of heavy loads and high speeds sends tire temperatures sky-rocketing above the danger point.

To obtain normal tire service, loads must be reduced as speed is increased. For example, by referring to any standard Load and Inflation Table, it will be found that an 8.25-20 10-ply tire is rated to carry 2,650 pounds at 60 pounds pressure.



HOW TO DETERMINE AXLE PAYLOADS:

$$\text{Front Axle} = \frac{\text{"B" x Total Load}}{\text{"C"}} \qquad \text{Rear Axle} = \frac{\text{"A" x Total Load}}{\text{"C"}}$$

"A" is the distance from the front hub to the center of the payload.
"B" is the distance from the rear hub to the center of the payload.
"C" is the distance from front to rear wheel hub, or the wheelbase.

As shown in table accompanying this article, this tire size will deliver normal, or 100% service at speeds of 40 miles per hour, or less. At 50 miles per hour the load must be reduced to 87% of 2,650 pounds or 2,305 pounds, to obtain normal service.

And here are the dangers of over-inflation. First, over-inflation reduces deflection and contact area, causing the tire to ride on the crown. This results in the following effects:

1. Tread wear more rapid than normal. See illustrations (sketches) on the first page of this article.
2. Increased tendency towards bruise or crown-breaks. See illustrations on the third page of this article. (Page 36.)
3. Excessive strain on beads and rim. Another of the illustrations shows a broken rim-flange and bead failure, caused by too much air-pressure.
4. Abnormal growth and possible tread cracking, as is also shown in one of the illustrations.
5. More cuts and snags than would be experienced with proper inflation.
6. Abnormal stresses and strains in the tread area

(*Please turn to page* 36)

PERCENTAGES OF RECOMMENDED MAXIMUM LOADS AT MAXIMUM SUSTAINED SPEEDS TO OBTAIN NORMAL SERVICE

Number of plies in Tire	MAXIMUM SUSTAINED SPEEDS—MILES PER HOUR										
	25	30	35	40	45	50	55	60	65	70	75
	PERCENTAGES OF MAXIMUM LOADS										
6-Ply						100	96	91	85	78	70
8-Ply					100	95	89	82	74	65	53
10-Ply				100	94	87	79	70	58	40	
12-Ply			100	93	85	76	63	45			
14-Ply		100	92	82	70	53					
16-Ply	100	90	78	61	29						

THE EFFECT of load and speed on tire service.... This table shows the percentages of recommended maximum loads, at maximum sustained speeds, which will tend to provide normal service from truck tires of various sizes.... It will also be well to consult a standard "Load & Inflation Table".

AVOID *the* EVILS *of* OVER-INFLATION, TOO (*Continued*)

increases the tendency towards tread separation.

7. Harder riding and increased up-keep on vehicle body and equipment.

8. Over-inflation reduces the non-skid feature, by reason of the smaller area of road contact.

The following recommendations are made by the Rubber Manufacturers Association, with special reference to proper inflation of truck tires:

(a) Inflate to proper pressure when tires are cool (see any standard Load and Inflation Table).

(b) If tires are continually *under-loaded,* use air pressure to correspond with actual load carried (see any standard Load and Inflation Table).

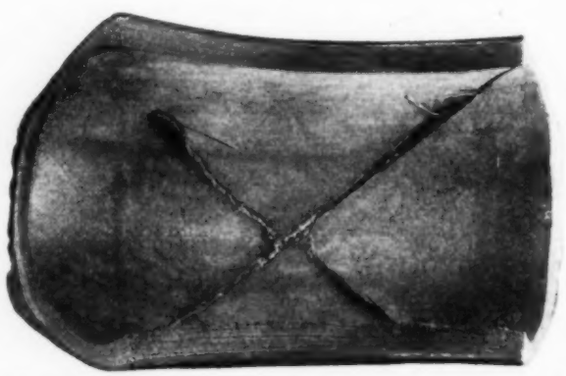
(c) If both load and speed are factors, either load or speed must be reduced to obtain normal service. (See table accompanying this article).

(d) Never "bleed" tires to relieve "build up" of pressure caused by heat. The ratio of temperature to pressure "build up" in service is approximately 8½ degrees of temperature for every pound of "build up." Thus the temperature in a tire which has built up 16 pounds in service can be approximately arrived at as follows: 16 pounds x 8½ + atmospheric temperature = Amount of temperature within the tire.

Thus if atmospheric temperature is 100°, the temperature within the tire will be approximately 236°. The ratio of air pressure "build up" to temperature will always remain constant but any attempt to correct by "bleeding" will sky-rocket the temperature within the tire to the danger point and even beyond the original curing temperature, and cause failure.

(EDITOR'S NOTE: For the convenience of our readers, we have secured a number of copies of this article, in 4-page folder form, on the back of which is printed the standard "Load and Inflation Table" referred to in this text. Should any of our readers desire a copy of the folder, just ask for one.)

CROWN BREAK, caused by over-inflation. . . . The contact area was reduced, causing tire to ride on the "crown".



BRUISE BREAK. . . . The tendency towards breaks of this kind is also rapidly accelerated by high tire pressures.

THE LEFT TIRE shows the result of excessive strain on beads and rim, caused by over-inflation. . . . Note that the rim flange is broken and also that the bead has failed. . . . The RIGHT-HAND tire shows abnormal "growth" and tread cracking, caused by continual over-inflation.

LOADED Ls TRUCK BODY WITHSTANDS 60-FT. PLUNGE!

1 *Ford truck with Lindsay Structure body at bottom of 60-foot ravine. The 8800-lb. truck with a 13,000-lb. load crashed squarely on its roof. Yet, the body held up under the impact, and neither of the two occupants was hurt.*

21,800 LBS. OF TRUCK AND PRODUCE HURTLE END-OVER-END DOWN WOODED RAVINE

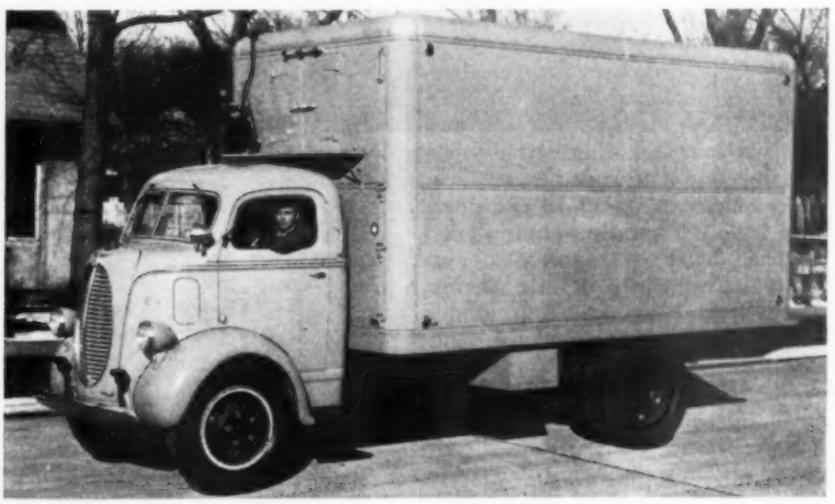
Lindsay Structure Body Shows Amazing Strength

Even this violent crash down a tree-studded ravine failed to collapse the Lindsay Structure truck body. And the strength of this body was all that kept Joe Ross and his driver from being crushed under tons of steel and produce.

The amazing strength of Lindsay Structure is made possible by its "pre-tensed" steel panels, which act as braces. And, this extra strength is gained without extra weight. In case of accidents, the damaged sections can be replaced from the *outside*, without special tools. Write, Dry-Zero Corporation, 222 North Bank Drive, Chicago; 60 E. 42nd St., New York.

2 *The same truck at the repair shop. Little damage was sustained. Not a single body panel had torn or loosened from the framing. The towing chains caused some of the denting of sides and roof cove.*

3 *The body builder, Mr. H. E. Olson, of the Twin City Carpenter Shop, St. Joseph, Mich., said, "There is no doubt that with an ordinary wood and steel body, the truck would have been a total wreck."*



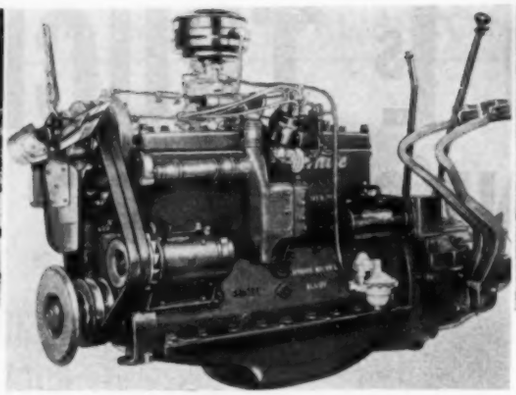
4 *Photograph of Mr. Ross's truck after repairs had been completed. The body withstood the crash so well that most of the Lindsay Structure materials could be used again. The cost of repair was remarkably low.*

LINDSAY STRUCTURE

for TRUCK BODIES

UTILIZES THE STRENGTH OF ALL THE STEEL

WHITE Super-Power truck on conventional chassis . . . The cab-over-engine version is shown at the right.



WHITE Super-Power engine (center) showing oil-temperature regulator, electrical accessories and fuel-pump.

WHITE FEATURES "SUPER-POWER" IN ENTIRE LINE

EXTENSION of the "Super-Power" engine design to a new, complete line of motor trucks in both conventional and c.o.e. types is announced by White Motor Company, Cleveland, Ohio. Straight trucks, tractors and 6-wheelers are made available in the various models, together with many new mechanical features and a greater trend towards basic standardization and interchangeability.

White has used "Super-Power" in two of its heavy-duty models for some time past. White engineers define "Super-Power" as a combination of features offering greater power with less fuel consumption, less truck weight with greater payload possibilities, more power to cut down road time, and lower total maintenance costs generally. This has been accomplished, the enginers declare, through better design, better thermal efficiency, better carburetion, better manifolding and sturdier construction, including better workmanship and materials.

To some extent White engineers have followed aviation engine practice, offering sodium-cooled exhaust valves with Stellite facing, copper-lead bearings impregnated with indium, higher compression-ratios, better balance, more thorough lubrication and others. So much for the features.

Four basic "Super-Power" engines are now being produced by White, to take care of the complete range of models in this group. Principal specifications are as follows:

Model 100A—6 cylinder, 3-7/16" bore, 4½" stroke, 250 cu. in. piston-displacement, 90 horsepower, 185 lbs. ft. maximum torque, with compression-ratio of 6.75 to 1.

Model 110A—6 cylinder, 3-9/16" bore, 4½" stroke, 270 cu. in. piston-displacement, 100 horsepower, 200 lbs. ft. maximum torque, with compression-ratio of 6.5 to 1.

Model 120A—6 cylinder, 3⅞" bore, 4½" stroke, 318 cu. in. piston-displacement, 110 horsepower, 250 lbs. ft. maximum torque, with compression-ratio of 6.4 to 1.

Model 140A—6 cylinder, 3⅞" bore, 5⅛" stroke, 362 cu. in. piston-displacement, 125 horsepower, 285 lbs. ft. maximum torque, with compression-ratio of 6.28 to 1.

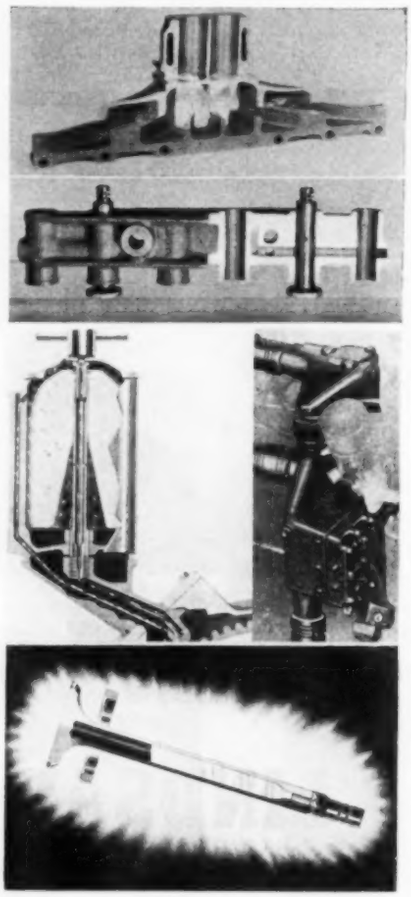
All models have a governed engine speed of 2,600 r.p.m. Cylinder blocks and crankcases are made of chrome-nickel iron alloy, with cylinder heads of cast iron. These four engines will power a complete line of truck models. The line of chassis models includes the following models:

WA-14, with gross rating of 14,000 lbs. WA-18 with gross rating of 16,000 lbs. WA-20 with gross rating of 18,000 lbs. WA-22 with gross rating of 21,000 lbs. WA-26 with gross rating of 24,000 lbs, and WA-34 with gross rating of 32,000 lbs. All of these chassis models are available in a choice of seven wheelbases running from 136" to 226". In addition to the conventional chassis line, each model has its counterpart in a "100" series of cab-over-engine models embracing a full line, powered by the same "Super-Power" engines and offering different gross ratings and wheelbase options. As previously stated, all types including straight trucks, tractors and six-wheel units are available.

Mechanical features of the new "Super-Power" line include the new White-designed, six-port intake manifold, the copper-lead indium-treated main and connecting-rod bearings, Stellite-faced exhaust valves and seats in all models with sodium-cooled valves an added feature in the two large engines, Wilcox-Rich hydraulic valve-lifters, full by-pass thermostatic cooling-system, aluminum pistons, Handy governor, five-speed transmissions, and oil temperature control.

All conventional chassis models are equipped with Stromberg dual-downdraft carburetors with manual

(*Please turn to page* 60)



SOME features of Super-Power: From top to bottom: Manifolding, hydraulic valve-lifters, oil-filter mounting, oil-temperature regulator and the new sodium-cooled exhaust valves with Stellite facing.

● *More* miles—safer miles for every dollar you invest—that's the story of WEED American Bar-Reinforced Tire Chains.

Double-welded Bar-Reinforcements on the cross chains provide twice the metal to wear through. They effectively stop *both* forward and side skid. Weedalloy, the metal used in WEED Americans, is unusually tough and wear-resisting, especially developed for tire chain use. Side chains are welded and case-hardened—another assurance of long mileage.

Standardize on WEED American Bar-Reinforced Tire Chains and cut your per-mile chain costs.

AMERICAN CHAIN & CABLE COMPANY, Inc.
YORK, PA.
IN BUSINESS FOR YOUR SAFETY

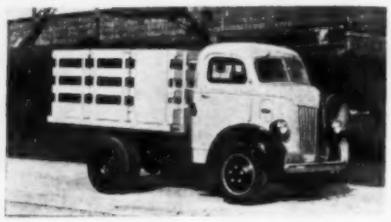
SEND FOR FREE CHART

Actual road tests prove that from 25% to 50% can be added to chain mileage by proper installation. Send for free chart that shows how to apply chains so that all cross chains get equal wear.

ACCO

WEED

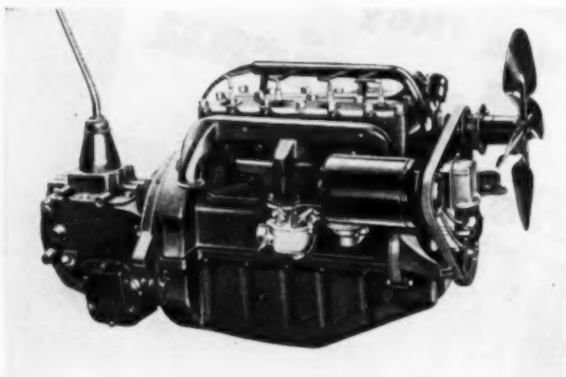
WEED American *Bar-Reinforced* TIRE CHAINS



1941 FORD TRUCKS

Include New, Small 4-Cylinder Engine as Economy Option

INTRODUCED in response to a definite demand from business, industry and agriculture for a power-plant in which economy is the dominant characteristic, a new four-cylinder engine is included in the 1941 Ford truck line announced last month by the Ford Motor Company, Dearborn, Mich. The new engine is intended strictly for operations such as house-to-house delivery of baked goods, dairy products, laundry and dry-cleaning and other industries where economy in delivery is paramount.



HERE is the new Ford 4-cylinder engine, with bore and stroke of 3 3/16" x 3¾", developing 30 h.p. at 2,800 r.p.m. and maximum torque of 85 pounds-feet between 650 and 1,650 r.p.m. . . . The compression-ratio is six-to-one.

The new 4-cylinder engine develops 30 horsepower at 2,800 revolutions per minute and 84 pounds-feet of torque at 1,000 revolutions per minute. The bore and stroke are 3.187 by 3.75 inches with a total piston displacement of 119.5 cubic inches. The crankshaft is of cast alloy steel and the camshaft of cast alloy iron. Valves are chrome-nickel steel with tungsten-steel valve-seat inserts for intake as well as exhaust valves.

Precision-set valve lifters are used. The distributor is direct-driven and the water pump is a pre-lubricated self-sealing type. The new engine has full-pressure oiling. Commercial cars, three-quarter and one-ton trucks are available with either the new 30-horsepower engine or the 85 horsepower V-8 engine.

Improvements on the 85 and 95-horsepower V-8 engines include new bolted-on camshaft gears. Valve stems are hardened still further where they fit into the guides. The engine vacuum connection is newly located on the manifold riser for improved operation of windshield wipers and distributor governor. Either of these V-8 engines is available in both the 158 and 134-inch wheelbase conventional and cab-over-engine trucks.

Rear springs are newly-designed, with twelve leaves instead of ten, for greater load-carrying capacity. Auxiliary springs also are new and when they come into action the load is more equally distributed on all eight rear spring brackets, according to Ford engineers.

New factory-installed frame reinforcements now are available at extra cost on trucks or chassis intended for exceptionally heavy-duty service with special bodies and equipment. These special channels fit tightly inside the frame side-members and extend from the front-spring rear brackets to the rear-spring front brackets, said to be the zone of greatest stress.

New styling distinguishes and enhances the appearance of the new line of Ford trucks. Chrome is used more extensively on hood and radiator and colors are brighter, in keeping with a noticeable trend among operators for trucking equipment with greater visibility.

New colors for 1941 are: Harbor gray, Cayuga blue, Mayfair maroon, Lochaven green and Palisade gray. Operators can select from seven different stake units in the new Ford line. Dean of the line is the 158-inch wheelbase "regular" with load space 142 by 82 inches.

There are also the 134-inch wheelbase stake, with load space 106 by 82 inches; the 134-inch wheelbase cab-over-engine stake, with load space 142 by 82 inches; the 101-inch wheelbase cab-over-engine stake, with load space 106 by 82 inches; the one-ton and three quarter ton stakes with load space 90 by 74 inches, and the 112-inch wheelbase stake with load space 80 by 67 inches.

Four panel units are offered to suit the varying needs of fleet operators. These are the 134-inch wheelbase panel trucks with load space 119¼ by 55½ by 55¼ inches; the three-quarter and one-ton panel trucks with load space 107¼ by 55¼ by 55½ inches, and the 112-inch wheelbase panel with load space 88 by 55 by 51½ inches.

In addition there is the sedan delivery designed especially for operators who prefer deluxe-type delivery equipment. It has finger-tip gear-shift and a body capacity of 86.6 cubic feet. Sides are lined with composition wood. Spare wheel and tire are in a compartment under the floor, accessible when the rear door is open.

Three units make up the line of open type express bodies. These are the three-quarter and one-ton express trucks, with load space 96 by 54 inches and the 112-inch wheelbase pickup, with load space 77¾ by 53½ inches.

(*Please turn to page* 64)

Distant Hauls or Daily Deliveries

DELAYS ARE COSTLY —LOADS MUST KEEP GOING ON TIME!

TO DO EFFICIENT, profitable hauling, you have to make sure your tires won't fail and cause delay along the way. Time out for changes and repairs cut deep into profits. Kelly knows that, and for years has made Kelly tires extra tough.

Kelly Truck Tires began making new mileage records in motor transportation long before 1917. So ask the old-timers. They'll tell you, "Kellys Are Tough," as well as, "dependable for 46 years."

Today, for interurban transport, or stop-start local delivery, Kelly's *Armorubber* tread and fatigue-proof cord body are topping their fine reputation. They're giving bonuses by adding extra thousands of cost-reducing, trouble-free miles to usual tire performance.

Your local Kelly dealer specializes in tires "job-designed" for your better service. He'll help you to lower your tire mileage costs.

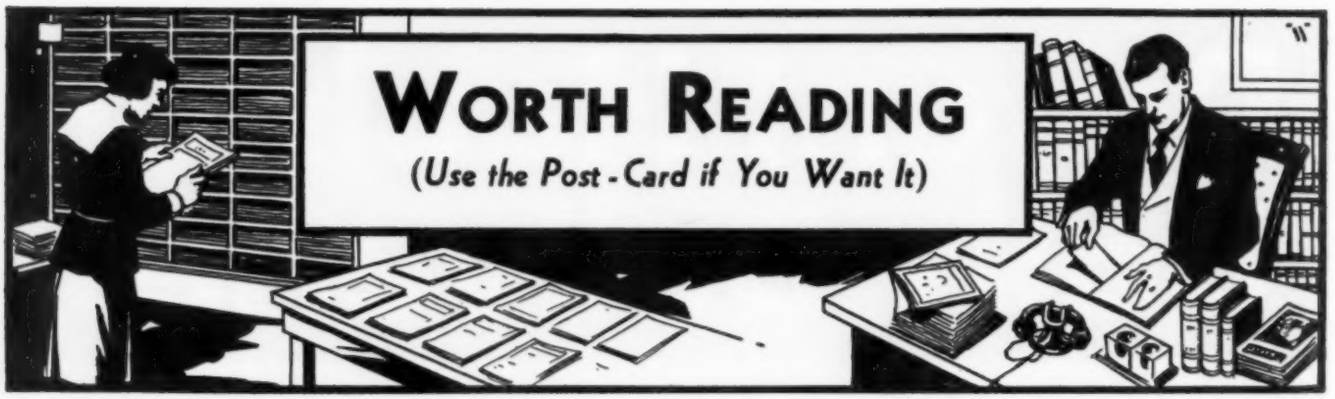
Heavy Loads, Long Hauls
The Kelly Perfected Rayon is setting new records everywhere for low ton-mile cost.

Local Delivery, Frequent Stops
The extra thickness of the Kelly Commercial Heavy Tread Tire cuts costs per mile.

The Kelly Rayon Cord
The Kelly C.H.T.

KELLY
Springfield
TIRES

DEPENDABLE FOR 46 YEARS



WORTH READING

(Use the Post-Card if You Want It)

(Ten new Automotive Booklets, Selected on their Merits only)

41. QUESTIONS AND ANSWERS . . . The subject of Engine Governors is discussed in question-and-answer form, in two new folders, recently issued. . . . Here are but a few of them: *How Modern Governors Permit Full Engine Power. . . . How the Vacuum By-Pass Operates. . . . How to Get Your Drivers to Accept the Use of Governors. . . . How to Inspect Governors. . . . How to Maintain Schedules with Governed Trucks. . . . How to Install Governors on all types of Carburetors and Engines.* . . . Actual installation drawings show all details, while pictures accompany the discussions. . . . Number 41 on our post-card brings you a free copy of these folders, by mail.

•

42. ALUMINUM PISTONS. . . . That's the title of a brand-new 48-page book which fully covers the subject of Pistons *and* Cylinder Heads. . . . In addition to chapters that illustrate and describe the various types of pistons and heads, you will find much in the way of useful data on installation, fitting, clearances, etc. . . . A chapter on piston-finishes is especially interesting; likewise a chapter telling how to get the most out of aluminum cylinder heads; instructions for tightening, etc. . . . There's no advertising matter in this book, which will be *mailed*, free, if you place Number 42 on our post-card.

•

43. STORY OF COTTON. . . . Here's an unusually interesting 52-page book that is a little *different* than those usually listed here. . . . It tells the story of cotton, and its application to many different industries. The authors take you right through the many processes, from the planting, picking, ginning, weaving, etc., all along to the finished product. . . . Special attention is given to the subject of cotton cord for truck tires, which should interest most fleet men. . . . Number 43 on the post-card brings this highly educational book, *free*, by mail.

•

44. "COMPOUND NO. 32". . . . A new booklet illustrates and describes Oakite's latest product that was scientifically developed for the safe removal of hard-water scales, rust and similar deposits, from equipment, parts and metallic surfaces in general. . . . In addition to covering cooling-systems it gives instructions for descaling such things as air-compressors, boilers, condensers, heat-exchangers, pumps, refrigerating-equipment, water-meters, etc. . . . Public-utility operators should find this booklet of special interest and value. . . . Number 44 on our post-card brings a free copy, *by mail!*

•

45. TIRE-CHAIN DATA. . . . Tire-chain weather is right around the corner. . . . The latest in tire-chain data books has just reached our desk —a 16-page booklet that is brim-full of information you'll need this winter in purchasing, stocking and repairing tire-chains for your trucks, buses and cars. . . . The tables show sizes for all cars and trucks, with prices, including single and dual-pneumatic types in various link-spacings. . . . Emergency-units are also covered. . . . The subject of tire-chain repairs is also discussed, with information as to how you can easily install a tire-chain service department in any corner of the shop. . . . Number 45 brings this data-book, free, by mail. The post-card is *only* for your convenience.

•

46. "LIFT MAGAZINE". . . . We didn't say "*Life*", although the cover and format are quite similar. . . . This is an interesting monthly house-organ, brought out by a leading manufacturer of hydraulic lifts for shop use. . . . It is well illustrated with many lift installations and in it you'll find data, from time to time, pointing out the various uses of lifts and other shop equipment of this type. . . . Since fleet operators are fast turning to the use of lifts (instead of pits) for service work, this magazine ought to be interesting to you. . . . Number 46 on our post-card means that your name will be put on the *permanent* mailing list, to receive it, *free*, just like you get this magazine each month.

•

47. BEARING LUBRICATION. . . . A 16-page booklet, full of *unbiased* lubrication advice covering every conceivable application of ball bearings. . . . Particularly useful is the simple method it shows, of determining the proper grade and viscosity of oil for various operating temperatures and bearing speeds. . . A discussion of the composition and use of greases and their suitability under different speed, temperature and moisture conditions, is especially interesting. . . . For your free copy of this little manual, just place Number 47 on the post-card, and one will come *by mail!*

•

48. CLEANING HANDBOOK. . . . This time it's Bendix who offers an attractive and profusely illustrated booklet covering the uses and origin of the new Bendix Cleaner for metal parts. . . . The principles of wetting and penetrating action are clearly explained, and the booklet is just chock-full of "how-to-do-it" information. . . . This manual goes far beyond the stereotyped "sales brochure" in giving general data and practical ideas. . . . Number 48 on the post-card, and a copy is brought by the mail-man before you realize it.

•

49. NEW MOTOR OIL. . . . In order to keep you up-to-date in the rapidly-changing picture of engine lubrication, one refiner has produced an interesting 16-page book. . . . It is well illustrated and includes some factual data showing how certain fleets have cut their maintenance costs through better engine performance and the elimination of a lot of carbon, sludge, gum and such. . . . Naturally, the idea is to interest you in their "modern" motor oil, and you can't blame them for that. . . . The book contains a minimum of laboratory data, a little promotional material (which won't hurt any of us) and some pertinent fleet facts. . . . Your checking Number 49 on our post-card will indicate *only* that you'd like a free copy, and that you'd like yours to come *by mail!*

•

50. SIX-WHEELERS. . . . The title of this 28-page book is "*Six-Wheelers, Push or Pull?*" . . . By means of pictures and short captions (just like a movie) it takes you through the evolution of the motor truck, and it contains a rather spicy discussion of which is better—a tractor-semi-trailer, or a 6-wheeler? . . . You might consider this book to be a bit biased, but since the firm that issues it makes axles for *both* types of vehicles, it is difficult to believe that. . . . This publication is guaranteed to be interesting reading matter. . . . After all, the object of this department is to provide you with late truck literature, and this certainly looks (to us) like something worth reading. . . . Number 50 brings a copy, free.

BREAKING ALL RECORDS FOR LOW-COST MILEAGE

212,818 MILES OF SERVICE

This is a photograph of a truck tire built with HR Cord. It ran for 212,818 miles. The tire was recapped twice. The owner writes us that it was taken from service only because it was damaged by a heavy spike.

ONCE you understand that the fibers in ordinary cord are held together only by twist, while the fibers in Bibb HR Cord are *bonded together so as to utilize the tremendous strength and flexibility of the cotton fiber,* you will realize how it is possible for Bibb HR Cord to give such astounding service.

Actual tests taken after 20,000 miles of service prove that Bibb HR Cord has 50% more residual strength than ordinary cord.

The Bibb HR Process prevents elongation which is the cause of tire growth and tread cracks.

Unlike ordinary cord, the fibers in Bibb HR Processed Cord are prevented from rubbing together to create high internal temperatures. The fibers in Bibb HR Cord do not slip to weaken the cord and cause blow-outs.

The casing of a tire built with Bibb HR Cord remains in best condition for recapping. Demand Bibb HR Cord for low-cost mileage. Mail the coupon today for full information.

Magnified cross-section of ordinary cord. Fiber slippage occurs because fibers are held together only by twist and friction.

In HR Cord the fibers are bonded and compacted into a high density, thinner, stronger and more flexible cord. Fibers cannot slip.

THE ONLY CORD WITH *BONDED FIBERS*

BIBB
The First Name in TEXTILES

BIBB HR CORD

TRADE MARK REG U. S. PATENT NO. 2103218

A Quality PRODUCT OF AMERICAN COTTON

BIBB MANUFACTURING COMPANY
Macon, Georgia

Gentlemen: Where can I buy tires made with Bibb HR Cord? [ ]

I am interested also in V belts. [ ]

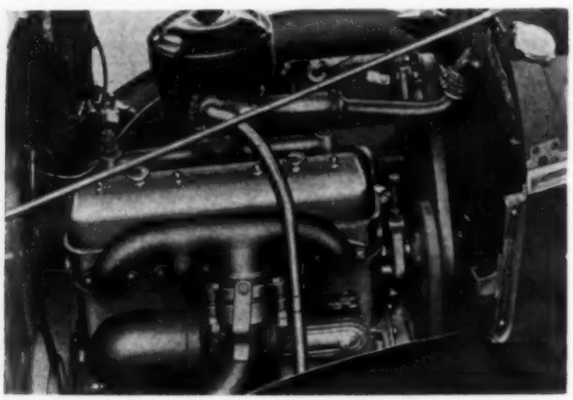
*Name*_____

*Address*_____

_____

Hercules Diesel "Package" for Chevrolet

A DIESEL "Power Package", especially engineered for the 1940 Chevrolet truck is announced by Hercules Motors Corporation, Canton, Ohio, and shown here. This unit is for conventional models, a replacement for the cab-over-engine Chevrolets being on the way.



The basic engine design from which the Chevrolet replacement package has been developed, is the well-known Hercules Model DOOD Diesel—four cylinders, with bore and stroke of 4¼ x 4½ inches.

Installation, according to the makers, can be accomplished by any good mechanic with one helper, without necessitating any major changes in the chassis. The engine is started with the same starter button, controlled by the same foot-accelerator, and stopped by a pull-handle on the dash.

Literature is now ready, completely describing this new model and giving installation instructions. For your free copy address Hercules Motors Corp., Canton, Ohio, mentioning FLEET OWNER, if you please.

●

U. S. Chamber Approves Joint Traffic Surveys

HIGHWAY policies were given considerable consideration at the recent annual meeting of the U. S. Chamber of Commerce at Washington, D. C. The following resolutions were adopted:

"The joint highway and traffic surveys recently in process in nearly all of the states should be continued, in order that highway authorities may at all times be provided with current information needed for efficient highway planning, both in developing a rational and balanced program for each state and in working out regional relationships. The data obtained from surveys should have full and constant use in all states for determining priority and character of improvement, in order that the interests of highway users may be equitably served.

"State highway departments should have authority to acquire lands necessary for proper highway construction. Revenues for highway purposes should be expended where they will give the best return in service to highway users and to taxpayers. Where necessary to accomplish this end, state highway departments should have supervision over expenditures of state-raised revenues, whether in state or local systems.

"There should be included in the future program a system of free inter-regional highways of proper standards, with appropriate allocation to them from available funds, and adequate express highways through the heart of cities, with by-pass routes where needed to relieve traffic congestion.

"The cost of highway facilities provided especially for military purposes, but also serving general traffic, should be apportioned between the federal government and state or local governments in proportion to benefits."

●

Newspaper's Trucks Cover 8,000 Miles Daily

MOTOR delivery of the *Dallas Morning News* requires the covering of 8,000 miles daily—more than 2,500,000 miles per year for the fleet.

This newspaper has a contract with one individual for the entire job. His trucks make delivery each morning to 108 locations in greater Dallas, and his subcontractors, with 110 pieces of equipment, deliver the paper over a 25,000-square-mile area in the Dallas trade zone.

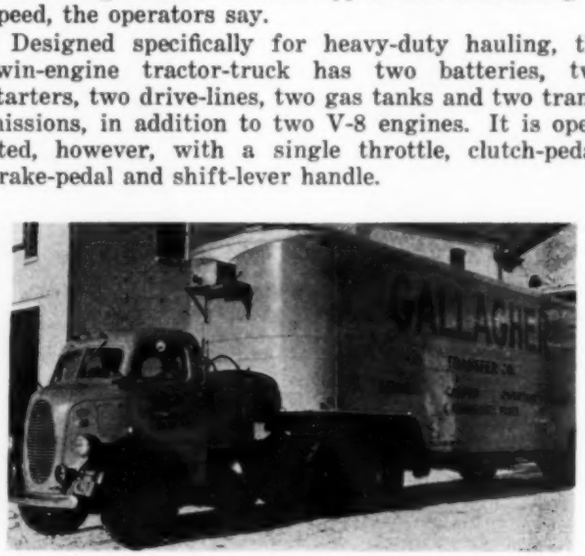
●

Two Engines Power Heavy-Duty Tractor

A NUMBER of highway haulers are bettering their operating schedules with a twin-engined, Ford V-8 cab-over-engine tractor-truck recently placed on the market by a Michigan manufacturer.

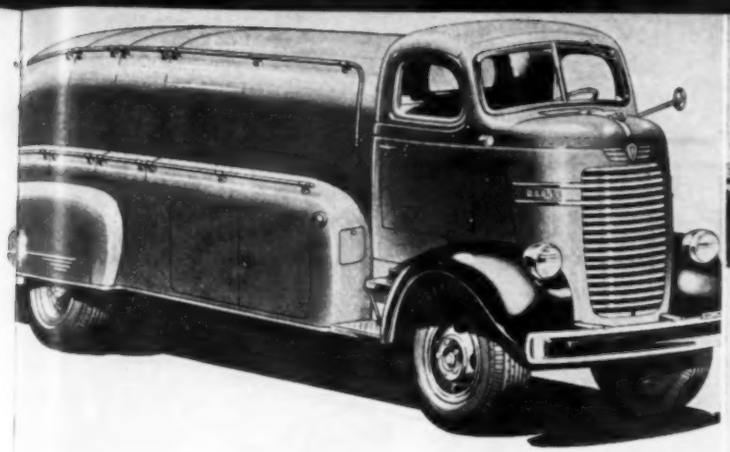
Better time is being made with bigger loads, due to the ability of the twin-engined unit to take hills and combat high winds without appreciable slackening of speed, the operators say.

Designed specifically for heavy-duty hauling, the twin-engine tractor-truck has two batteries, two starters, two drive-lines, two gas tanks and two transmissions, in addition to two V-8 engines. It is operated, however, with a single throttle, clutch-pedal, brake-pedal and shift-lever handle.



The second engine is installed behind the cab, as shown in the picture, and supplies power through its own transmission and drive-shaft to the second driven axle. The specially designed shift-lever handle is arranged so that both transmissions can be shifted together or either one separately. Thus the two engines may be operated singly or together and the drive transferred from one to the other at will, providing unusual flexibility of power.

According to the manufacturer, one highway hauler cut six hours from his regular schedule on a 700-mile run and another is saving $5 a trip on a 500-mile run hauling 16-ton loads. Eighty per cent of this year's sales have been re-orders, the manufacturer states.



1941 TRUCK LINE BY DODGE IS MOST COMPLETE

MODERNLY streamlined in styling and advanced in design and engineering, the new 1941 line of Dodge Job-Rated trucks is definitely the most complete in the history of the corporation. It is now being offered in 112 standard chassis and body models (an increase of 16 models since the outset of 1940) on 18 different wheelbase lengths and in 6 capacities, ranging from one-half ton commercial units to heavy-duty gasoline and Diesel-powered freight haulers. The new line is said to meet 97.3 per cent of all truck hauling requirements.

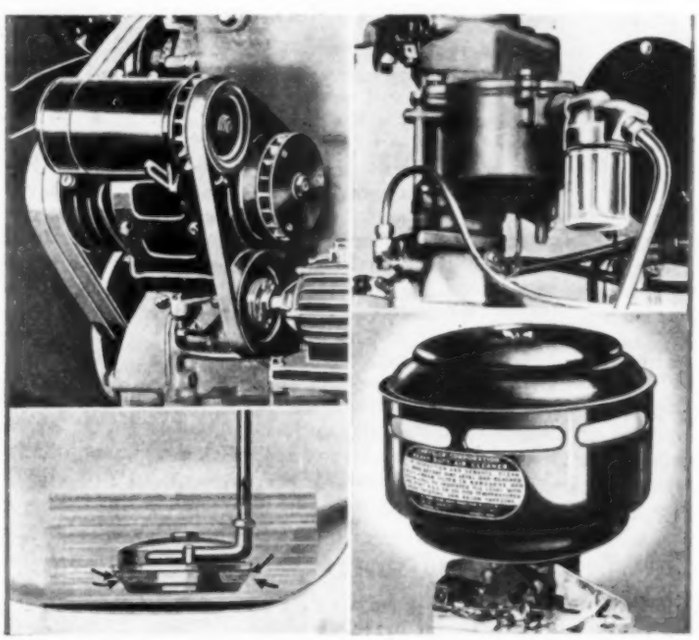
An impressive trimness is instantly discernible on each model, from the chrome-finished radiator grille ornamentation and louvers, through every line of the cab and fenders. "Sealed-Beam" headlights mounted in pockets formed in the front fenders, and new style parking-lights mounted on the cowl, are innovations contributing to the streamlined appearance. The new ½, ¾, and 1-ton models are available in a score or more of tu-tone color combinations at no extra cost.

Among the engine additions are an oil-bath air cleaner and a metal-edge fuel-filter mounted at the carburetor. The latter is in addition to the filter incorporated in the fuel pump. A floating-type oil-pump screen improves the efficiency of the oil pumps. The hinged intake screen floats just below the surface of the oil in the crankcase, following the rise and fall of the oil-level. Thus oil is never drawn directly to the oil-pump from the surface of the reservoir, which is apt to be frothy or foamy during engine operation, or from the bottom of the crankcase where sediment may settle.

In all models, the Dodge truck-built, six-cylinder high-compression engine is retained. Typical Dodge truck engine features include: Aluminum alloy, lubricated multi-ring pistons; exhaust valve-seat inserts; full-length water-jackets; by-pass thermostat; replaceable, precision-type main and connecting-rod bearings; full-pressure engine lubrication; chain-driven camshaft and air-cooled generator.

All ½-ton, ¾-ton and 1-ton 1941 models have a new synchro-shift transmission, which minimizes the possibility of gear clashing, reduces wear and facilitates maneuverability of the truck. Horsepower and torque in each of these models is increased by use of a new high-lift camshaft.

An important improvement offered as standard equipment on all one-ton models in 1941 will be a full-floating type rear axle with a one-piece housing. Sixteen-inch six-stud wheels will be standard equipment on this model, with 20-inch wheels available as extra equipment. One-ton models with stake, platform, panel and pickup bodies are now offered with dual rear wheel equipment available. With dual wheel equipment, stake and platform bodies have an additional width of six inches.



FOUR interesting improvements in Dodge truck engines for 1941. . . . All Dodge Diesels now have 2 generators—a 24-volt job for starting and a 6-volt generator for lights and accessories. . . . All Dodge engines now have "floating" oil-intake, oil-bath air-cleaner and fuel-filters.

An important change in the new Dodge provides a 1½-ton model with standard S.A.E. 60-inch cab-to-rear-axle dimension. This truck has a wheelbase of 135 5/16 inches, and replaces a former 133-inch wheelbase model. An additional axle ratio of 6.833 is also available on 1½-ton models.

New-style tires with a flatter and thicker tread, greatly increasing contact area with the road, are provided as standard equipment on the new 1½-ton, 2-ton and heavy-duty gas-powered models as well as on all Diesel-powered trucks. Studs are now used instead of screws, to fasten the rear axle drive-

(*Please turn to page* 63)

PIONEER IN DEFENSE

● *To the Editor:* We have read with a great deal of interest your editorial in a recent issue entitled *"Emergency Unit"*, which refers to the defense activities sponsored by the New Jersey Motor Truck Association.

This is a most important move in the matter of defense, and we might say that we believe the Motor Truck Club of Massachusetts was the pioneer state association in the establishment of emergency defense units, when and if required.

Early in June our board discussed this matter, and later in the month we were approached by a representative of the Massachusetts Adjutant General's office, which resulted in their attendance at our July board meeting.

Shortly thereafter we mailed a transportation questionnaire to the owners of 40,000 motor trucks in Massachusetts, and launched the "Massachusetts Emergency Motor Transport Corps".

We believe that the wide publicity which your good magazine is giving to the start made by the New Jersey organization and our own, will result in other organizations taking an active part in national and state defense programs.—*E. C. Benway, Mgr., Motor Truck Club of Massachusetts, Inc., Boston, Mass.*

●

NUMBERING SUGGESTION

● *Dear Mr. Fischer:* In the July issue, Trouble Shooters' Department, a party asked for suggestions as to numbering vehicles. We have been using a system of numbering, both for identification and analysis purposes.

For example, we use the 1,000-series to identify our Ford 60 h.p. cars; the 2,000-series to identify the 85 h.p. Ford cars; the 4,000 series for Chevrolets; and the 6,000-series for Plymouths.

As you will note, this system is flexible enough to allow for 999 replacements, the index number denoting the make. Any series of numbers could be used, providing the makes or types involved would not exceed nine. Should it be necessary to exceed the four digits, a compound figure could be used, the initial figure denoting the make or type.

We noticed this item in the current issue and thought possible the system we were using might be of some benefit to your correspondent. If we have been of service, we're glad.—*H. W. Gray, The Employers' Liability Assurance Corporation, Ltd., Boston, Mass.*

●

HOW TO REDUCE COSTS

● *To the Editor:* You have been sending your monthly magazine, FLEET OWNER, to the writer, in care of C. E. Hunt & Sons, Inc., and we all have found it very interesting.

I believe that if every fleet operator, large or small, were to read and thoroughly digest your articles each month, it would go a long way towards helping them to reduce their costs, maintain their fleet schedules, etc., and keep their vehicles out of the shop and on the road where they belong.—*Alfred J. Hunt, Worcester, Mass.*

●

Q-O-M PAYS FOR ITSELF

● *To the Editor:* For several years, with more-or-less regularity, we have made use of your monthly surveys, conducted in the Question-of-the-Month department.

In a number of cases these covered subjects of no particular interest to us at the moment, because of our peculiar type of operation. However, we filled them in and I do not need to tell you that the tabulated reports which we received in return have more than repaid us for our trouble.

We like your magazine, FLEET OWNER, and would like to say "Thanks" for all of the information which you publish.—*G. H. Sibley, Chief, Branch Operating Division, Jewel Tea Company, Barrington, Ill.*

●

GOOD MILEAGE?

● *To the Editor:* While reading an article in a recent issue of FLEET OWNER, regarding the *Chicago Tribune* garage, I became very much interested in the cost figures mentioned.

You show gasoline required on a 2½-ton truck to be 247 gallons for 3,867 miles. That's better than 15½ miles to the gallon. You can readily appreciate that we are further interested in such an achievement, and would like to get a little more data regarding the maintenance of this fleet operation.

We are always enthusiastic readers of your magazine, FLEET OWNER, and often get valuable tips on maintenance and operation in motor transportation from it.—*R. D. Sidel, Pres., Budget Transportation Service, Inc., New York, N. Y.*

●

"COVER TO COVER"

● *To the Editor:* I have been receiving copies of your magazine, FLEET OWNER, for several months, and greatly appreciate being on your mailing list.

You may be interested to know that I read FLEET OWNER each month from cover to cover, and find many helpful and interesting articles and advertisements in it.—*Richard W. Robinson, Supt., M.V.S., U. S. Post Office Garage, Brockton, Mass.*

●

"NO TIME LIKE THE PRESENT"

● *Dear Mr. Fischer:* Although we have been enjoying your magazine, FLEET OWNER, for some time, we have just not found the time to answer your Question-of-the-Month questionnaires.

Since we are very much interested in obtaining your confidential reports regarding the various surveys that you make, we feel that there is no time like the present to start answering the questionnaires. Our answer to the current one is enclosed.—*W. F. Neubeck, The Donaldson Baking Co., Columbus, Ohio.*

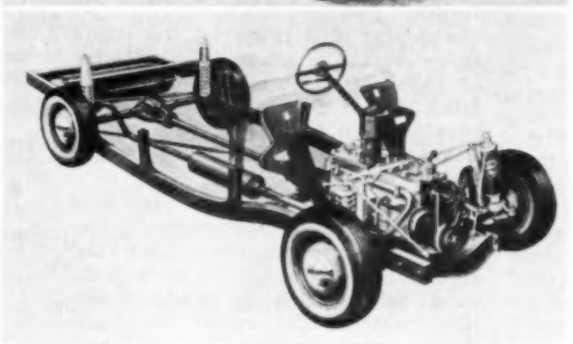
●

SHORT AND SWEET

● *To the Editor:* I am quite sincere in saying that I appreciate receiving your publication, FLEET OWNER, and I assure you it is also welcomed in our shop.—*Alexis Caisse, Jr., Supt. of Streets, City of Willimantic, Conn.*

NASH

ENTERS NEW LIGHT CAR IN RACE FOR FLEET BUSINESS



THREE views of the new Nash "Ambassador 600" . . The top view is just a picture . . . At center is a phantom view showing "unitized" type construction . . . Engine, chassis, below.

NASH Motors Division of Nash-Kelvinator Corporation, Detroit, Mich., threw its hat into the lowest-price car field last month, with the announcement of a low-priced "economy" car, to compete with Ford, Chevrolet, Plymouth and the Studebaker Champion. Extensive effort will be made to cultivate fleet operator sales, it is indicated.

Features stressed by the maker are as follows: (1) Gasoline economy of from 25 to 30 m.p.g. (2) New "unitized" body construction, with integral frame, all welded into a single unit. (3) New type spring suspension, with coil-springs on all wheels. (4) New L-head 6-cylinder power-plant. (5) Modern type bodies in both streamlined and trunk backs. (6) Full-size car interior roominess. (7) New two-way ball-bearing steering, with 16½-foot turning radius.

Nash's new light car is called the "Ambassador 600". It is built on a 112-inch wheelbase chassis, the weight of the 4-door sedan being given as 2,550 lbs., estimated. Power-plant is an L-head, 6-cylinder engine of new design, called the "Flying Scot", which is said to reach its greatest efficiency in the "range of greatest use". Piston displacement is 172.6 cu. in., developing 75 h.p. at 3,600 r.p.m. Bore and stroke are 3⅛" x 3¾".

Engine characteristics include down-draft carburetion, steel-strut aluminum alloy pistons, full pressure lubrication to all bearings, including piston-pins by means of rifle-drilled connecting rods. By means of newly developed machines, the entire crankshaft and flywheel assembly is dynamically balanced.

Uniform temperature control is promised, by casting the inlet manifolds inside of the head, and completely water-jacketing all cylinders. Exhaust manifolding is likewise cast within the block, as shown in the illustration. A high compression ratio of 6.7-to-1, plus double automatic spark control, are other specifications of interest that are said to contribute to the economy factor.

Road-tests, according to Nash engineers, have shown the new car to travel well over 30 m.p.g., although the initial advertising claims but from 25 to 30 m.p.g. under average driving conditions.

The new "unitized" body is an all-welded steel unit, with integral chassis frame and internal bridge-like truss construction. From 400 to 500 pounds of useless weight is saved in this manner, it is claimed. This feature is clearly shown in the above illustrations.

The bodies are lower and the design makes possible concealed running-boards. Evidenced only by a "crash-bar" when the doors are closed, the running-boards are flush with the floors and are covered with ribbed rubber. The bodies are completely insulated and sound-proofed by means of "sand mortex" applied to body panels. Doors are weather-sealed and body and fenders are Bonderized to prevent rust. Finish is in slow-baked, high-gloss enamel.

The new car is said to be the first low-priced American car to be sprung directly on coil-springs on all four wheels. The Nash system employs giant king-pins, 20" long, set vertically and supported at the top by a horizontal steel tube, and at the bottom by a front suspension-bridge-like truss that forms part of the welded steel body. A mirror-smooth collar rides up and down the lower section of each king-pin on 6 caged roller bearings, carrying the front wheel spindle at its lower end. Its upper end supports a resilient coil-spring, which, in turn, carries the body weight on a tapered roller bearing. Direct-acting tubular shock-absorbers operate parallel to the king-pins.

Rear suspension consists of two long, soft, easy-acting coil springs, controlled by large vertical shock-absorbers set *inside* the coils. A new type of torque tube, housing the drive shaft, positions the axle fore and aft. A rubber-cushioned alignment bar provides lateral cushioning. Unusually low unsprung weight is claimed as a result of this design, which is also illustrated. The new front-end suspension provides the basis for a two-way ball-bearing steering system, which will turn the car around in a 33-foot circle.

The long, low, slipstreamed design follows the "torpedo" trend, with trunk-backs being optional. Front-end treatment provides a horizontal cooling grille extending completely across the front of the car. Vertical grilles face off the smooth face of the catwalk. Sealed Beam headlights are set into the fenders.

(*Please turn to page* 62)

A department, devoted to correspondence from readers of FLEET OWNER. Any questions having to do with automotive service will be answered in this department. All properly signed inquiries will be replied to by mail and such of them as are believed to be of possible interest to other readers will be published in these columns.

INSULATION FOR ASPHALT?

● *To the Editor: We are interested in ways and means by which we can insulate a 2,500-gallon tank mounted on a semi-trailer, for use as a transport unit for hot road-oils and asphalt.*

The temperature would range from 200° to 400° F. Our problem is to hold the temperature constant, from the refinery to the delivery point.

We understand that there is a form of padding made that can be placed around the tank. Our idea is to insulate with about a 1-inch layer and then cover it with light sheet metal, to keep the tank attractive.

Will you please consider our problem and either refer us to proper concerns for information, or refer our problem to firms engaged in the insulating business.—C. A. S., San Antonio, Texas.

Answer: Upon taking this matter up with insulation experts, we learn that any of the mineral wools make excellent insulation for high temperatures, if such material is held properly in place.

It is suggested that you "cradle" your tanks, so as to allow an insulating space of not less than 2 inches, and fill this space with a good mineral wool batt (not loose material), stuck in place with silicate of soda.

We have further had it pointed out to us that mineral wools, while ideal for high-temperature insulation, are not entirely suitable for low-temperature work, because of moisture conditions. However, in your case the net vapor-pressure will be *outward*, and you should have no trouble, provided you thoroughly seal your outside shell against the weather.

●

HOME-MADE VISCOSIMETER

● The glycerine people pass on this stunt to us, believing that we sometimes have to check up on the viscosity of various liquids, such as lacquers, oils and the like. For the average shop, the purchase of an expensive viscosimeter is not practicable, but one that will serve many needs can be made by utilizing the naturally viscous property of glycerine.

Applying this property, the liquid to be checked is compared with a set of tubes of uniform bore and size, filled, except for a small bubble of equal size in each tube, with varied mixtures of glycerine and distilled water.

These "standard" liquids are best made by using pure glycerine in the first tube, and stepping down the glycerine concentration in each additional tube by 10%, by means of distilled water. The corked tubes are then securely mounted on a baseboard.

"Known values" can be readily established, or the range of viscosity can be judged, by noting the rate at which the bubbles rise in the tubes after they are inverted and righted, the rate at which the bubbles rise vertically in the tube being proportional to the viscosity of the glycerine-water mixtures.

In making a test, the liquid to be checked is placed in a tube exactly like the others, having the same sized bubble. The rate at which this bubble rises may then be compared with the bubble rise in the "known value" tubes, to determine the relative viscosity of the liquid being tested.

●

You May Not Believe It!

(But It's True)

THE FACT:

MOST motor truck scales tested throughout the United States last year were found to be inaccurate, some of them being "off" as much as 66 percent.

THE PROOF:

A REPORT made by the Bureau of Standards recently states that 72 percent of the motor vehicle scales tested were found to be inaccurate. . . . Wagon scales were found to have the largest percentage of errors, 81 percent being inaccurate. . . . Of the motor truck scales examined, 67 percent were found defective. . . . Eight scales were discovered to have maximum percentage errors in excess of 5 percent; these errors ranged from a low of 5.10 percent, to a high of 66.56 percent.

DATA ON SEMAPHORES?

● *To the Editor: In reviewing your article on "Direction-Signals" which appeared in the July 1940 issue, I found it very interesting, but could find nothing covering the mechanical arm type of signal.*

Most of the driving by personnel of our fleet is done during the day, and we, therefore, favor the mechanical arm. I would appreciate any information you can give me with regard to the above-mentioned type of signal, and whether or not we are wrong in favoring it.—H. C. M., Washington, D. C.

Answer: We do not wish to call you "wrong" for favoring the semaphore-type signal. You are entitled to your opinion. However, where direction-signals are mandatory, which you will find in most states, it is also necessary that an "approved" type must be used.

Without becoming involved in the exact requirements of the various states, we would venture a guess that not very many of them approve semaphores, especially unlighted ones. In fact, ten or more states require *illumination* of direction-signals.

You ask why the semaphore-type was not mentioned in our survey. The best answer is that the operators who answered our questionnaire do not happen to be using that type. The fact that the lamp-type of direction-signal seems to have displaced the earlier semaphore-types, might constitute sufficient evidence that the lamp-type is more desirable, both from the standpoint of legislative approval and practicability. We do not know. We told you everything we knew on the subject, in our July issue.

PISTONS

(Here's how you can get INTIMATE BUYING INFORMATION on this subject:)

THESE monthly questionnaires enable us to come right back at you with *practical* experience information, rather than a lot of theory. . . . It is a dandy method of getting a cross-section on fleet practice, on almost any subject.

The questionnaire is the *first* step. In return for a few minutes of your time in filling it out and sending it back to us, you will receive *your own* private, personal copy of the complete picture. We do all of the *hard work*, digesting and totaling the replies—and *you* get the *benefit!*

Names of fleets or executives are *never* mentioned or disclosed in any way. So don't hesitate to participate. You can *trust* us! The only thing we give out is the total, the trend, the popularity of relative makes, etc.

Once you participate, we feel sure that you will do it regularly. Your cooperation is appreciated.—H.C.F.

(Please tear out and mail to The Editor, Fleet Owner, 90 West St., New York, N. Y.)

Question No. 111—Pistons

What piston material (*iron, semi-steel, aluminum, etc.*) do you prefer for passenger cars? .....
For light trucks? ..... For heavy trucks? ..... For buses? .....

Do you replace iron pistons with *aluminum* pistons, in any vehicles? ☐Yes; ☐No; ☐Sometimes

If so, in what types of vehicles? ☐Pass. Cars; ☐Light Trucks; ☐Heavy Trucks; ☐Buses

Do you ever replace iron pistons with special *light-weight* iron pistons? ☐Yes; ☐No; ☐Sometimes

If so, in what types of vehicles? ☐Pass. Cars; ☐Light Trucks; ☐Heavy Trucks; ☐Buses

What is the average life of *iron* pistons in the passenger-cars of your fleet? ..... *miles*
In light trucks? ..... *miles;* In heavy-duty trucks? ..... *miles;* In buses? .....

What is the average life of *aluminum* pistons in the passenger-cars of your fleet? ..... *miles*
In light trucks? ..... *miles;* In heavy-duty trucks? ..... *miles;* In buses? .....

What *make* (or makes) of pistons do you prefer for general replacement work? ..... (*Confidential*)

What *type* of piston do you prefer for replacement work? (*T-Slot, Strut, Trunk, etc.*) .....

Do you have any preference as to piston finish? (*Tin-plating, etc.*) ..... If so, what? .....

Which type of piston-grinding do you prefer? ☐Round-ground; ☐Cam-ground; ☐No preference

What success have you had with piston-expanders? ☐Satisfactory; ☐Unsatisfactory; ☐No experience

What *make* (or type) of piston-expander do you prefer? ..... (*Confidential*)

What is your main source of supply on replacement pistons? (*Please check ONE below*)
☐Automotive Jobber; ☐Vehicle Dealer or Factory Branch; ☐Piston Mfr.; Others? .....

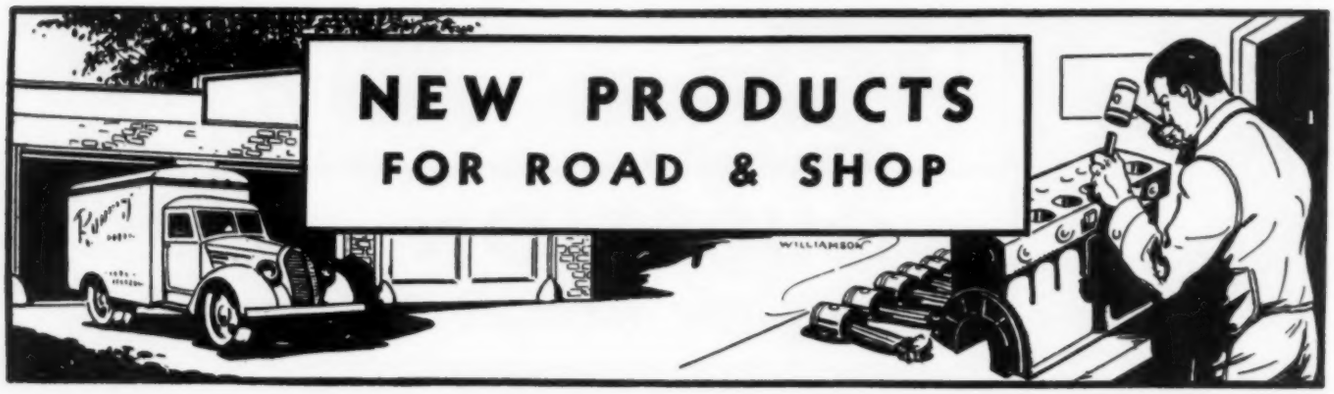
REMARKS (*Tell us your chief difficulty with pistons, please*) .....

How many vehicles in your fleet? (*Please indicate below*)
Trucks ..... Tractors ..... Trailers ..... Pass. Cars ..... Buses ..... Miscellaneous .....

***Note:** If you cooperate with us and fill out this questionnaire, you will be entitled to a tabulated report covering all of the answers.*

Swap your transportation experience with other fleet operators in this easy, convenient way. We do the work. You get the benefit.

Name of Firm .....
Address .....
City and State .....
Your Name ..... *Position* .....



Tire-Chain Repair Links

THE new "Wing-Loc" tire-chain repair link, illustrated here, makes possible the instant repair of broken cross-chains. By simply inserting

the repair link into the broken cross-chain, the repair can be made without removing the chain from the tire.

The makers have made tests that indicate complete satisfaction and long service from tire-chains repaired with these links; they claim as much or more mileage as the original cross-chain.

The link reinforces the cross-chain at the weak spot, it is claimed, and its spreading "wings" shield the adjoining worn links from further wear. . . . The makers will be glad to send sample links to interested fleet operators. Address Peerless Chain Company, Winona, Minn., mentioning FLEET OWNER for quick service.

•

Magnus "Skin-Gard"

THE Magnus Chemical Company, Inc., has issued a new descriptive, illustrated folder on its product, Magnus Skin-Gard.

Magnus Skin-Gard is a cream which, when rubbed into the skin, protects it against chemicals, solvents and dirt of all kinds—against dangerous infection, annoying cracks and abrasions. Workers whose skin comes in contact with solvents should find Skin-Gard beneficial in preventing the

solvents from removing the natural oils in the skin.

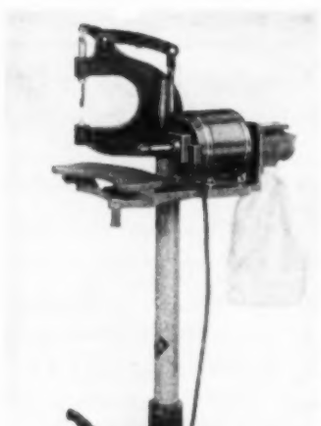
Magnus Skin-Gard comes in two grades, Regular and Waterproof. Waterproof Skin-Gard effectively protects the skin against water, acid and alkaline solutions, according to the makers.

The folder also discusses in detail the classifications and causes of industrial dermatitis and its prevention.

A copy of the Skin-Gard folder can be obtained by writing to the Magnus Chemical Company, Inc., Garwood, New Jersey. . . . You'll mention FLEET OWNER, won't you?

•

New Grey-Rock Reliner



THE MODEL HF (horizontal feed) brake reliner is a complete unit consisting of foot riveter, counter-sinking and grinding unit, mounted on one pedestal. It will handle all passenger-car and light truck brake shoes, and is offered at a low price.

Drilling and counter-sinking is done horizontally, with direct drive from the electric motor mounted on the stand. The machine will de-rivet the old lining, drill and counter-bore the new lining, and set the rivets. A buffer for removing burrs around rivet holes and for chamfering the ends of lining, is located on the far end of the motor. The table is adjustable—being raised or lowered by the turning of a screw, to center the drill properly.

Equipment includes ¼ h.p. motor with built-in switch, counterbores, punch, punch-pins, anvil, depth-gauge, etc. . . . For more details address U. S. Asbestos Division, Manheim, Pa. . . . You'll mention FLEET OWNER, won't you?

•

"Dor-Tite" Weather-Strip

THIS is an all-purpose weather-stripping designed especially for use on automobile and truck cab doors,

but also adaptable to storm-windows and doors around the garage, shop and home. It is called "Dor-Tite".

"Dor-Tite" is made of a special sponge-rubber, securely fastened to a fabric base. The latter prevents the stretching of the material when being applied, and also prevents absorption of the adhesive into the sponge-rubber.

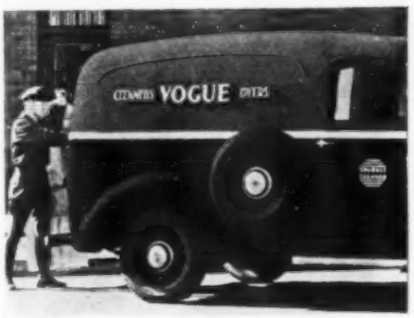
A special gauge for determining the exact space between door and jam, with doors in a *closed* position, is furnished free with a small assortment of "Dor-Tite", which comes in sizes from 3/16" x ⅝", up to 9/16" x

1½", in graduated dimensions and in rolls of 10, 25 and 50 feet long. Special thicknesses can be furnished on request.

For more details and information as to how to obtain the free "Dor-Tite" gauge, address Durkee Atwood Company, 40 Wilder St., Minneapolis. Minn., mentioning FLEET OWNER, if you please.

3d Dimension Truck Signs

MADE of cast aluminum in standard letters or special designs to conform with the requirements of the fleet, a new type of "3rd dimension"



truck lettering is offered by Metalite Products, Inc., 10 So. 12th St., Minneapolis, Minn.

With ample depth to stand out from the body, and with sloping beveled edges that are painted to contrast with the polished surface, the third dimension is thus secured. This feature is claimed to be superior to general lettering, produced either by hand or with decals.

Aside from its high advertising value, Metalite 3rd dimension lettering is claimed to be very economical. The first cost is but slightly higher than painted lettering, but they are declared to last indefinitely, without becoming dull or tarnished.

Many local and national fleets are now using this type of lettering, say the makers, who will be glad to send complete details and estimates on request. Write to Metalite Products, Inc., 10 So. 12th St., Minneapolis, Minn. . . . You'll mention FLEET OWNER, won't you?

•

Blinker Warning Lights

ESPECIALLY designed for trucks that must work on the highway at night, is the new blinker light illustrated here. Its purpose is to warn oncoming traffic and thus prevent accidents.

These lights are built of heavy materials, mounted on a sturdy U-shaped bracket, so that they may be pointed either forward or aft. By means of a fool-proof magnetic flashing unit of the mechanical (not thermostatic) type, they blink *alternately*, thus creating the illusion of a red lantern being waved from side to side.

Models are also available that can be attached to portable dry or storage batteries, to protect men working in excavations, man-holes, etc., are so used by public utilities, according to the maker.

Complete literature may be obtained without obligation by writing to Leo S. Stern, 250 E. 43rd Street, New York, N. Y., mentioning this announcement in FLEET OWNER, if you please.

•

New Permanent Anti-Freeze

DEVELOPMENT of a high-boiling-point anti-freeze of the "permanent" type is announced by E. I. du Pont de Nemours & Co., Wilmington, Del., under the trade-name of "Zerex".

The new "Zerex" is based on ethylene glycol, and is synthetically manufactured from the raw materials

coal, air and water. It will be introduced this Winter as a companion product to "Zerone", a methanol-type anti-rust anti-freeze, also made by du Pont.

Ethylene glycol is well-known as a "permanent" anti-freeze. It permits high temperatures in automotive engines and also in car heaters used to condition interiors. It is, of course, non-evaporating and has a higher boiling-point than plain water.

For more information regarding du Pont's new "Zerex", list prices, fleet discounts, etc., address E. V. Schumacher, c/o E. I. du Pont de Nemours & Co., Wilmington, Del. . . . You'll mention FLEET OWNER, won't you?

•

New "Foam-Type" Cushions

A NEW type of upholstered sponge-rubber cushion, designed to relieve truck drivers from excessive fatigue and nerve strain on long trips has been developed by the Comfort Cushion Co., 5301 Grand River Ave., Detroit, Mich. This is the most recent addition to the company's general line of cushions, mattresses for sleeper-cabs and general upholstery.

Features promoting driver-comfort and safety are claimed for this new cushion, and considerable interest on the part of motor carriers and other large truck fleet operators, for replacement purposes, is reported.

The cushioning properties of the material used, combined with scientific design, is said to protect drivers from road shocks and from the bounce or recoil of conventional coil springs.

The new cushion is self ventilating and is said to be comfortably cool, even in the hottest weather. Dampness resulting from absorption of the moisture of perspiration is also prevented. The cushion is said to be proof against dust, germs and moths. . . . For more details write the maker, mentioned above. . . . You'll say you saw this in FLEET OWNER, won't you?

•

Globe Wheel Dolly

A NEW, patented wheel dolly has been placed on the market by Globe Hoist Company of Des Moines, Iowa, and Philadelphia, Pa.

This device is designed to provide an easy means of removing and installing wheels on heavy-duty buses and trucks, and to reduce the labor cost and personal accident hazard occasioned by this work.

With the truck or bus jacked up just enough to provide clearance for the tire, the Globe Wheel Dolly is rolled under the wheel, or wheels. Movable rollers on each side of the dolly engage the tires. In the case of duals, these rollers automatically adjust themselves to compensate for any variation in tire diameter in order to keep the wheel in a vertical position. By means of a hand-wheel geared to the screw shaft, the operator quickly adjusts the rollers so that the wheels "ride" properly on the dolly. The dolly is mounted on three four-inch ball-bearing, swivel casters. An arch-type stanchion serves as a handle for pushing the dolly and also permits easy access to hub fastenings.

The Globe Wheel Dolly will handle all sizes of single or dual wheels.

With this unit, it is claimed, one man can readily handle a job that usually requires two men working at least twice as long, and without risk of strain or personal injury. . . . For more details write to August Leidy, c/o Globe Hoist Company, 1000 E. Mermaid Lane, Philadelphia, Pa. . . . Please mention FLEET OWNER.

Walker "Lucky Boy" Jack

A NEW one-ton mechanical service jack is announced by Walker, called the "Lucky Boy" and featuring "floating frame," which permits the jack to raise the load on an irregular floor surface.

Even with one wheel blocked up, it is claimed, this new jack will raise its capacity load, and its frame will snap right back into normal shape when the load is released. This "floating frame" type of construction makes the jack useful in road service where vehicles must be jacked up on uneven road surfaces.

A flip of the thumb-catch removes the handle, for loading the jack into the service car. In the shop, when not in use, the handle stands up straight, the jack requiring less than two square feet of floor space. Large wheels make for easy handling. The raising and lowering mechanism is controlled at any point on the handle. The lifting arm lowers itself automatically when free of the load.

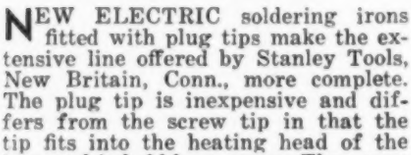
Full particulars, prices, etc., may be obtained by writing directly to T. F. Hall, c/o Walker Manufacturing Co., Racine, Wis. . . . He'll be glad to know that you read this announcement in FLEET OWNER.

•

Stanley Soldering Irons

NEW ELECTRIC soldering irons fitted with plug tips make the extensive line offered by Stanley Tools, New Britain, Conn., more complete. The plug tip is inexpensive and differs from the screw tip in that the tip fits into the heating head of the iron and is held by a screw. The screw permits easy adjustment and removal of tip.

The heating unit of the iron is hermetically sealed, to prevent corrosion; it is wound around a hollow core and conducts a uniform flow of heat to the plug tip. The handles are of



hardwood and have an adjusting sleeve which allows the handle to be increased in length. Each iron is furnished with six feet of approved heater-cord, cord-strain relief and a tool-rest stand.

Plug tips for the irons are available in two types—copper and armor-clad. The armor-clad tip is similar to the copper tip except that it is clad with a special metal coating that protects the surface of the copper and produces a long-life tip, free from corrosion and rapid wear.

Stanley plug tip electric soldering irons are made in four sizes—105 watts, 3/8" tip diam.; 150 watts, 1/2" tip diam.; 200 watts, 5/8" tip diam.; 350 watts, 7/8" tip diam. Each size is available with all-copper tip or armor-clad copper tip.

•

Compressor Line Revised

A NEW catalog describing the complete line of its latest model air compressors, in sizes from 1/4 to 15 h.p., developed especially for automotive uses, has been issued by Worthington Pump & Machinery Corp., Harrison, N. J.

These units can be furnished in both single and two-stage types, tank-mounted or base-mounted, with separate tank, for any state code. All are fitted with the Worthington "feather-valve" and are equipped with either constant-speed or automatic start-and-stop control, according to requirements. Electric motor or gasoline engine drive is available.

Sizes range from 1.34 to 134 c.f.m. displacement, single stage; and from 3.9 to 67 c.f.m., two-stage. . . . For copy of catalog write to Worthington Pump & Machinery Corp., Harrison, N. J., mentioning FLEET OWNER, please.

•

New Body Literature

A NEW bulletin describing the all-steel Lindsay Structure truck body has just been released by the Dry-Zero Corporation, 222 North Bank Drive, Chicago, Ill.

This bulletin explains the basic Lindsay Structure principle and points out the advantages of Ls truck bodies. It also contains photographs demonstrating the step-by-step method of assembling these bodies from standard parts. Copies will be sent upon request. . . . Mention of FLEET OWNER will be appreciated.

•

For Cleaning Bearings

SIMPLER, faster and more economical washing of large ball and roller bearings (up to 12" in diameter) is accomplished with the Croft Bearing Washer, shown here.

In operation, the container is filled half-full of cleaning fluid; the bearing is placed on the cone and the gun is employed to force cleaning liquid all through the bearing.

This equipment is sold separately, or in connection with the Croft Truck Bearing Packer, both exclusively distributed by the Ahlberg Bearing Company, 4703 S. Whipple St., Chicago, Ill. . . . They will be pleased to send full details on request. Mention of FLEET OWNER always helps.

•

Chevrolet Repair Manual

A NEW Chevrolet repair manual covering many phases of service on 1939 and 1940 models has been published by the National Automotive Parts Association, Fox Building, Detroit, Mich. . . . This is the third volume to be published on Chevrolet cars, and is one of the regular series of NAPA Mechanics' Repair Manuals for popular cars. Manuals for 1939 and 1940 Ford and Plymouth cars are also ready.

The new manual has 58 pages of text, well-illustrated with 77 drawings. The manual is printed on tough, grease-resistant paper that will stand up under handling in the shop. . . . A new feature is a section on Motor Tune-up and Specifications, which should prove to be a valuable guide to service men.

Eight other sections give complete and detailed service information on Engine, Carburetor and Fuel Pump, Clutch, Transmission, Universal Joints and Propeller Shaft, Rear Axle, Front Axle and Steering Gear, and Brakes.

Although the price of 65c per copy, which this manual carries, is a slight increase over the price of previous similar manuals, due to increased costs, the added material should make it well worth the difference, according to NAPA headquarters. The manuals are available through NAPA Warehouses and Jobbers.

NAPA has published these manuals for several years, in the belief that their use will help repair shops and individual mechanics do better work.

New Cooling System Flusher

THIS NEW equipment, called the *"SupeRadiator Flusher"* consists of a 10-gallon welded steel tank mounted on a strong channel-iron frame with a total height of 48 inches. It occupies less than 2 sq. ft. of floor space.

In use, a special compound is first placed into the cooling system and allowed to circulate, with the engine idling, for about 45 minutes. Then the flusher is hooked up, removing all foreign matter by controlled hydraulic pressure.

The outfit is supplied with convenient water and air-line connections, control-lever, back-pressure gauge, 11 ft. of hose, nozzle and a set of adapters. . . . For more information write directly to Thompson Manufacturing Co., Hammond, Ind. . . . You'll mention FLEET OWNER, won't you?

•

Du Pont Degreasing Fluid

A NEW concentrated degreasing solvent with unique grease-emulsifying properties is announced by the Du Pont Company. Called "Dissolvo," it will be distributed with other products in the No. 7 line of chemical specialties.

Diluted with varying amounts of kerosene or fuel-oil, a gallon of the new cleaner will produce from four to eight gallons of degreasing fluid. Its uses include cleaning garage-floors, grease-pits, cement driveways, motors, chassis, auto parts, tools and garage equipment. It is described as non-inflammable and as harmless to metals.

The percentage of dilution varies with the type of work to be performed. For articles only slightly grease-stained, one part "Dissolvo" in eight parts of kerosene or fuel oil is recommended. For extremely heavy-duty such as cleaning mucky, grease-coated floors, one part in four is declared essential. For average cleaning, the manufacturer recommends diluting one part "Dissolvo" with six parts kerosene or fuel-oil. The proper solution can be readily mixed in a can or pail before the cleaning operation is started.

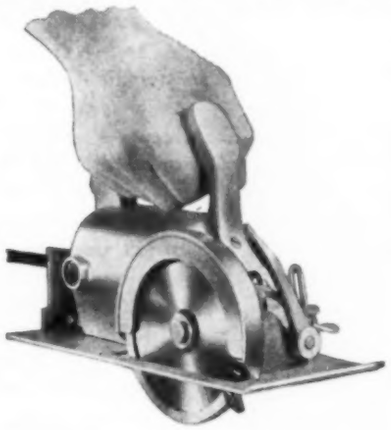
Tools, service parts and similar accessories may be cleaned by immersing a wire basket containing the articles in a bucket of the solution, scrubbing if necessary with a brush. Floors, driveways and motor-blocks should first be liberally sprinkled with the solution and spread with a brush or broom. Hard deposits of grease should be loosened by thorough scrubbing. The user should wait 15 minutes for the solvent to penetrate and emulsify the grease, and then hose off the surface with water.

•

Portable Power-Saw

A NEW portable electric saw, known as the "Guild-Cutter," has been announced by the Syracuse Guild Tool Company, Syracuse, N. Y.

This new tool is a light, portable saw, designed to cut material up to 1¼" thick, and is especially useful on wood, plywood, celotex, masonite and other building materials. Equipped with a saw blade 4½" in diameter, the Guild-Cutter has a wide range of uses. The saw arbor also provides for



the use of a ¼" width Dado head for ploughing, grooving, tennoning and dadoing.

As the base of the machine quickly raises and lowers, any depth cut from a mere scratch to the full 1¼" capacity may be made. The base also tilts to a 45° angle for beveling. A telescope-type guard protects the blade at any angle.

Frame of this unit is of cast aluminum alloy, with high polish finish. The complete tool is 11¼" long, 8" high and 4½" wide. It weighs 7 pounds. Power is supplied by a universal, 110-volt motor that will operate from any lighting socket, a.c. or d.c.

For further details, list price, etc., address Sam Mellor, c/o Syracuse Guild Tool Company, 1720 N. Salina St., Syracuse, N. Y. . . . You'll mention FLEET OWNER, won't you?

•

New Imperial Catalog

COMPLETE data on flexible fuel-line replacements, as well as many new items and price changes, are included in the new condensed automotive catalog which has recently been issued by The Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago, Ill.

Described in the catalog are all types of copper-tube fittings, shut-off cocks, drain-cocks, flexible fuel-lines, choke-controls, air-nozzles, radiator water-faucets, barrel-faucets, tube-working tools, battery-testers, freeze-testers and many other items.

Copies of the catalog, which is designated No. 22, may be obtained by writing to the manufacturers, mentioning FLEET OWNER, if you don't mind. There is no obligation.

•

Free Body Bulletins

A NEW bi-monthly publication—*Lindsay Structure News*—is now being published by the Dry-Zero Corporation, manufacturers of Lindsay Structure materials and Dry-Zero insulation.

This new paper is similar in format to the company's other publication, *Dry-Zero News*. It will discuss the selection, construction, and repair of motor truck bodies and will contain pictures showing the latest developments in custom-built bodies. Also incorporated in the publication will be articles demonstrating how truck operators have found a solution to their trucking problems.

To be placed on the Lindsay Structure News mailing list, write the Dry-Zero Corporation, 222 North Bank Drive, Chicago, Ill., mentioning FLEET OWNER, please.

•

Universal Filter Elements

NEW low-priced oil-filter elements, known as the "Argo" line, are announced by AC Spark Plug Division of General Motors, Flint, Mich.

The "Argo" line contains types adaptable for all popular makes of oil-

filters, and, according to AC, completely fills the demand for a low-priced product, which will be marketed as a companion line to the AC Kleer-Kleen Igneonite element.

The "Argo" element is of the cotton type, of uniform density and built to give good service, AC engineers declare.

To adapt the element to some types of oil-filters it is necessary to use a metal conversion unit, which AC has made available. They will be glad to send further details on request. . . . Mention of FLEET OWNER is always appreciated.

Heil Nation-wide Service means a lot to the profitable operation of your fleet

HEIL HOISTS, BODIES AND TANKS

10½ cu. yd. Heil Boulder Dam type rock body and Heil Straddle Mount Telescopic Hoist.

Heil Trailerized Tank Train hauls 7650 gallons and saves money on every trip.

. . . A Complete Line — Correctly Engineered to Meet Every Requirement of HEAVY DUTY SERVICE

Years of experience and research stand back of the Heil Quality trademark on hydraulic dump units and transportation tanks — as your assurance of satisfaction. But that's not all. In addition, there's a national network of Heil service stations ready to accept full, undivided responsibility for all claims. There's one near you, to help keep your fleet operating profitably. That's why it will pay you to get Heil recommendations on your next equipment order . . . Write today for free Heil equipment manual.

MILWAUKEE, WISCONSIN — THE HEIL CO. — HILLSIDE, NEW JERSEY

Hoists — Bodies — Road Scrapers — Tanks Snow Plows

HEIL Quality Products

Bottle Washers — Heating Equipment — Dehydrators Water Systems

Greyhound Maintenance

(*Continued from page* 21)

While on the inspection pits, coaches are greased completely. In this particular shop over nine thousand pounds of chassis, transmission and differential lubricants are used each month throughout the year.

Batteries are checked for loose terminals and condition of charge, and are then filled with water and replaced in the coach. Modern coaches make extra demands on electrical systems because of the air-conditioning system.

All chassis and body bolts are inspected and tightened. At the same time inspection is made of the condition of springs and spring mountings. Notations are made of any weak or broken spring leaves.

In keeping with the modern trend in transportation, Greyhound have installed equipment to cool and filter the air in many of its coaches. These units, powered by small gasoline engines, also receive a thorough inspection.

Engine condition is carefully checked to make sure that all units are functioning properly. Thus many costly road delays are prevented by removal of weak or unsatisfactory parts which might cause mechanical failure on the road.

Near the end of the inspection line the fuel tanks are filled and oil-level is checked. Oil-filters are cleaned and oil is changed when records show that the required mileage for this operation has been reached.

During each operation on the inspection line, records are kept and notations are made of the condition of all parts to be changed or repaired. These slips are placed in a holder for the information of the repair department.

Since it is difficult to jack up a bus while over an inspection pit, wheels, wheel bearings and brakes are inspected and reconditioned on the repair floor. At this time a complete check is also made of the steering mechanism.

Tires are inspected and faulty ones are removed. Spares are kept in racks together with their service and mileage record. If inspection shows a carcass good but the tread worn smooth, it is re-grooved before being placed in stock.

In changing tires, small bits of paint are often knocked loose. In such cases the entire wheel is scraped and then repainted to improve the appearance and to prevent rust from forming, which would tend to weaken the wheel.

On the repair floor all faulty units noted on inspection slips are removed and replacements made. Men thoroughly familiar with each unit will repair and recondition them before they are placed in stock for future service.

A complete engine overhaul is performed at definite intervals, depending on the model of engine and type of service encountered. However, these periods are arranged so that other major repairs may be made at the same time.

Valve grinding and inspection of engine bearings, timing gears, oil pumps, etc., is, in general, based on mileage. However, actually, intervals of inspection are determined by records showing expected life of the parts.

All transmissions and differentials are reconditioned on a mileage basis. As in the case of other units they are removed at any time a defect shows during operation and replaced by a new or reconditioned part.

A department recently established, repairs and reconditions engines, compressors, cooling coils and fans of air-conditioning units, which have been installed in busses to insure maximum passenger comfort.

Bodies are covered with a light alloy material of high tensile strength. This reduces weight, thus allowing increased economy and performance. Necessary repairs are usually made by replacing an entire panel.

All scars and scratches are repainted in a modern and complete paint shop. As each bus leaves the garage for its next run, it is in good mechanical repair and presents a neat and finished appearance.

Many States Fight to End Diversion

TAXPAYERS throughout the nation are joining in the fight to stop the practice of diverting highway funds. An active effort has started in Tennessee, where last year nearly $4,000,000 of road imposts were diverted for other purposes. North Carolina and Georgia are waging campaigns against diversion. Highway users, civic groups, trade associations—all are banding together in an attempt to end the practice.

Protest against diversion of highway funds in Iowa was registered in a resolution of the Iowa State Federation of Labor. At its annual convention the organization urged an amendment to the State Constitution to prevent diversion of highway revenues and urged that any increase in gas taxes be opposed.

In Utah, the State Road Commission is vigorously opposing diversion of State gasoline tax money. A recent survey by the State Educational Committee proposed that motor vehicle license fee money amounting to about $800,000 be diverted to the State general fund. Now Directors of the Municipal League of Utah have joined in the fight against the plan.

Rural letter carriers are actively fighting diversion. The Wisconsin Association has asked the 1941 legislature to approve submission of the anti-diversion amendment which was passed by the 1939 legislature. Illinois carriers passed a resolution condemning diversion.

Again New York State led all others in diversion. Over $75,000,000, more than three-fourths of the State's total road imposts, was diverted for other purposes. New Jersey diverted large sums to the general fund, and South Carolina diverted $2,000,000 for state government expenses.

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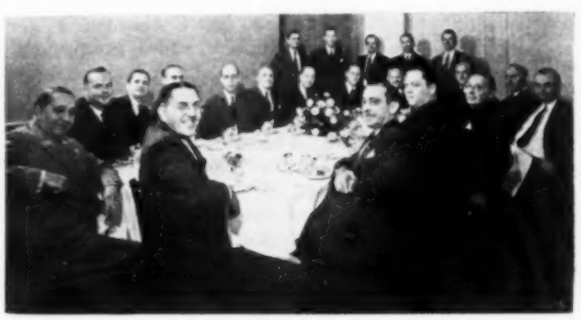
Hold Grey-Rock Branch Managers' Conference

GREY-ROCK territorial branch managers met with factory officials at the Grey-Rock plant in Manheim, Pa., September 13-16, for their annual sales con-

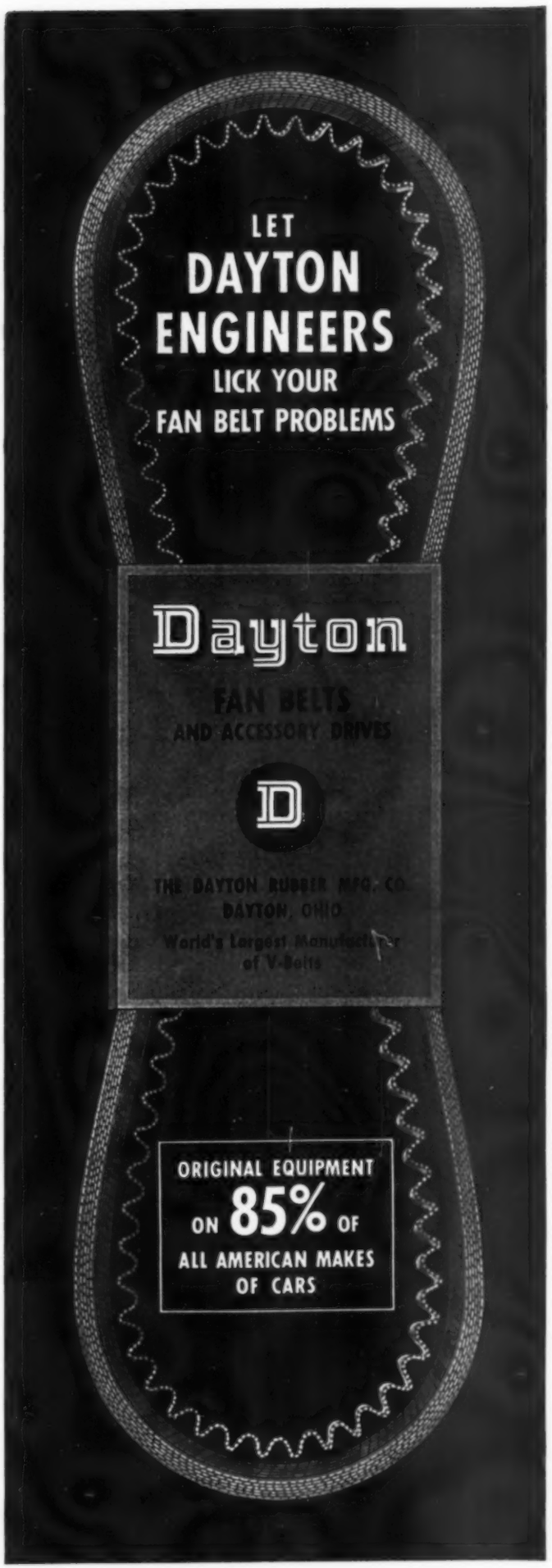


ference. The meeting was called by Franklin A. Miller, Grey-Rock sales manager, for a general discussion of advertising, merchandising, and sales plans for 1941.

The proposed program was outlined and discussed at large and this year's sales activities were reviewed.

A statement by Mr. Miller indicates that although this year's sales of Grey-Rock products have broken all existing records by a wide margin, the 1941 campaign is expected to account for even further sales increases.

The 1941 Grey-Rock program will not be revealed until A.S.I. Show Time in December. However, Mr. Miller promises Grey-Rock jobbers and dealers that they can expect a new type of campaign which is both unique and powerful.



ZENITH GOV·U·RETOR

because it "streamlined" the jobs of carburetion and governing

...we "streamlined" its name

Combining carburetor and governor in a single, engineered mixture and speed control element.

ZENITH did a *complete* engineering job and *combined* the functions of a reliable speed control with thoroughly efficient carburetion. The result is the Zenith GOV-U-RETOR in one unit, with one throttle.

It provides a more efficient flow of fuel—minimum disturbance of manifold distribution—fewer parts—simpler service—less surging—smooth governing action on levels or grades—better all around operating economy and satisfaction.

The Zenith GOV-U-RETOR is cutting costs in many fleets. Downdraft and updraft types to fit most popular engines. Write—

ZENITH CARBURETOR DIVISION
BENDIX AVIATION CORPORATION
696 HART AVENUE DETROIT, MICHIGAN

Generator Maintenance

(*Continued from page* 24)

"Generators without regulators"—141; "Generators with regulators"—67; "No answer"—47. . . . From this we were able to draw our conclusion that generators, equipped with voltage-regulators are a good thing to have.

It's quite difficult to accurately figure out electrical demands upon a generator and battery, but we asked this question, anyway: "*What is your average generator capacity?*" . . . 114 fleets reported "Above maximum load"—which means that their generators are big enough come hell and high water; 66 fleet men reported "Below maximum load"—which means that they ought to have generators of greater capacity. The balance, 75 fleets, either did not answer or did not know; we're willing to give them the benefit of the doubt. . . . It is to be assumed, in a great many cases, that those fellows with generators of more than ample capacity for their needs are the very same ones that specify special generator equipment on new vehicles, or who replace regular generators with special ones. At least, that's what we'd like to have you believe.

In answer to the question, "*Do voltage-regulators tend to lengthen battery life?*", the answers were "Yes"—189; "Sometimes"—31; "No"—16; "No answer"—19. . . . A long time ago some authority (it wasn't Confucius) made the statement that more batteries die of under-charging than of over-charging. We do not know how to tie that in with the answers to the above question, except perhaps to state that the voltage-regulator is responsible for forestalling an untimely end to the life of many a battery that might be the victim of some screw-driver mechanics who like to advance the third-brush of every generator as far around the clock as it will go. That's where the voltage-regulated generator steps in, and gives the battery a boost only when it needs it, and in proportion to its state of charge.

Another question asked, "*Do you exchange generators where available?*" . . . The answers were "Yes"—128; "Sometimes"—13; "No"—84; "No answer"—30. . . . It would be a fine thing if the range of sizes and types of generators, subject to exchange, were extended to include all generators; that's the only comment we can make on this one.

The question of re-wound armatures seemed controversial, so we asked, "*Do you use re-wound armatures?*" . . . Here the answers were "Yes" — 100; "Sometimes" — 24; "No"—85; "No answer"—46. . . . Again we refuse to stick our neck out by commenting. Shut your eyes and take your pick.

And here is where *we* come in. We asked, "*Do you feel that there is a need for more service information on the subject of generators?*" . . . The answers were "Yes"—182; "No"—38; "No answer"—35. . . . FLEET OWNER has, more than once, come to the rescue of fleet men with information that seemed to be lacking. Again you can depend on us. In an early issue there will be an article entitled "*Voltage Regulation—What It Is and How It Works.*" Following that one there will be another entitled "*How to Adjust and Maintain Voltage-Regulators.*" . . .We are convinced, by now, that there *is* a demand for information of this sort, so just watch for these articles. They'll be published any month now; perhaps sooner than that.

Source of supply always being of interest, we next asked, "*What is your main source of supply on generator replacements?*" . . . The answers were "Electrical Distributor"—121; "Automotive Jobber"—97; "Vehicle Dealer"—36. . . . Since the vehicle dealer has first crack at the fleet man, it seems to us that he ought to enjoy more of this replacement business; but that's *his* problem.

There were several other questions asked, having to do principally with makes of generators, brushes and replacement parts preferred by fleet men. Naturally, many makes were

mentioned, and the survey should give the participating operators some idea as to the relative popularity of such things among fleets. Sorry that we can't give them to you here. Such intimate data as trade-names and brands are reserved only for those fleet men who were kind enough to work with us in this survey. By this time they have received their own confidential tabulation of this entire survey. If you'd like this information in future surveys, all you have to do is participate by tearing out the questionnaire and sending it back to us, properly filled out. And, oh yes, you must borrow, beg or steal an envelope in which to mail it, and a purple stamp; three green ones will do; so will a red and a green.

The interest manifested in this generator survey was very great, judging from the many various remarks penned in at the bottom of the blanks. We haven't room to reproduce them all here, but the following, picked at random, may interest you:

"There is a need for better voltage-regulation on small jobs."

"Improper dipping of field-coils causes insulation dripping."

"Generators are often poorly located for cooling and servicing. We have had to install grease-cups because oil-cups provided poor lubrication."

"Most generators are o.k. There is room for improvement in regulators."

"Exchange should be extended to cover a larger stock of different sizes."

"Further improvements needed on voltage and current regulators."

"Original generators too small; too much load for them in fleet work."

"Generators could turn slower, and thus provide longer brush life."

"Brushes could be made to give longer wear. Some armatures are too small and burn out too quickly. Some cut-outs could be made a little better."

"Many generators do not have sufficient commutator and brush capacity."

"Low cut-in, heavy-duty generators should be standard on all vehicles."

"Have a hunch that we pay for a lot of exchanges, when brushes are only needed."

"Most of our trouble is caused by brushes wearing down the commutator."

"Would like to see a voltage-regulator that really works."

"Third-brush generators, without regulators, have given a great deal of trouble and expense, due to burned-out armatures."

"Why do truck generators seem to give trouble, with only lights to supply, when passenger-car generators have radios, heaters, cigar-lighters, defrosters, etc?"

"With proper capacity generator and proper voltage-regulator, our troubles are nil, and the life of plugs, distributor, coil and battery are increased."

"Our trouble is due to having to carry too high a load on standard generators."

"Late type of generators seem to stand up better than those of several years ago."

"Suggest larger bearings for drive-end of generators."

"It is often difficult to get definite setting specifications for regulators."

"Have trouble in keeping batteries charged at our low driving speeds."

"We require a high out-put, low cut-in generator; must buy special equipment."

"Generator troubles are minor, since the installation of voltage-regulators."

"Standard generators do not have enough capacity for tractor-trailer use."

"Have difficulty in getting parts and service when truck is out on the road."

"Voltage-regulators give plenty of trouble, but they save much battery grief."

And that folks, is the story on generator maintenance. This survey can be considered quite representative, as it includes the experiences of 255 fleet operators, located in 39 states, Puerto Rico and Canada, having an average

NOT JUST ANOTHER ROLLER BEARING

All inner bearings are furnished with Grease Seal. Wrapped in oil-paper and packed in individual cartons.

Exclusive concave-convex roller design—no other bearing has it!

Amazing Performance on

FRONT WHEELS,

DIFFERENTIALS AND REAR AXLES

• At first glance, this Link-Belt bearing may look like other roller bearings . . . but look closer and you'll see a mighty big difference. Its concave roller surface prevents binding—assures longer service. And, when you try a set on your next job, you'll appreciate what its exclusive features mean in improved performance.

Ask your jobber to explain this bearing to you . . . ask him particularly why it is a better bearing for front wheel service. Get the facts today!

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519 N. Holmes Ave., Indianapolis, Ind.
Warehouses in all principal trading centers

Made by the makers of the famous Silverstreak Silent Timing Chain!

LINK-BELT
SHAFER
ROLLER BEARINGS

MEETING SPECIAL NEEDS WITH- EBERHARD STOCK ITEMS

The wide variety of truck hardware in the big Eberhard line generally makes it unnecessary to design and build special fittings for unusual requirements.

For instance, the heavy truck shown in these pictures has folding rear doors, but the hardware consists of standard Eberhard stock items. Doors are attached to the body with No. 5832 Hinges; No. 9485 Hinges connect the door sections; and No. 5607 Slam-Tite Locks provide the door fastenings.

For all your body hardware need, special or regular, consult the Eberhard catalog. Eberhard time-tested fittings offer real economy and dependability.

Body by JAS. HANNAH, Chicago.

Eberhard Manufacturing Co.
Division of Eastern Malleable Iron Co.
Cleveland, Ohio

EBERHARD
AUTOMOTIVE HARDWARE
COMPLETE DESCRIPTIVE LITERATURE ON REQUEST

of 172 vehicles each. These fleets operate 25,948 trucks, 1,643 tractors, 3,314 trailers, 9,145 passenger-cars, 2,832 buses, 420 taxicabs, and 843 miscellaneous vehicles, making a grand total of 43,965 vehicles.

Maybe it will be in order to give you a list of the industries, whose fleets participated in this survey. This will serve to give you a better idea as to the general coverage of it, and also an idea of the *tough* job it is to word a questionnaire that will be answerable by a fleet operator in *any* line of business. Fleets in these industries participated: Trucking, local and long distance; ice cream; dairy products; bakeries; public utilities; manufacturers; municipalities; petroleum companies; ice and coal dealers; contractors; building material companies; grocers; department stores; meat packers; drive-yourself companies; truck-rental companies; bus operators; brewers; laundries; county departments; state departments; federal departments; food products; bottlers; taxicab companies; lumber companies; newspapers; nurseries; insurance companies; hardware wholesalers, etc.

So you see, this survey is *quite* representative. We would like to see a greater number of fleet operators participate in this monthly feature, in return for which you will get a private and personal copy of the *confidential* tabulation which we make. This contains all such information that we can't give here—such things as tradenames, etc.

This month's questionnaire promises to be unusually interesting. If you feel that you'd like to get the confidential report which it will bring, just turn to page 49, tear out the page, fill in the answers to as many questions as you can (or as you care to) and send it back to us. Rest assured that everything is kept *confidential*, and that your name is *never* mentioned to anyone, or at any time. It's your cooperation that we need to make this thing a success. Thanks.

•

Van-Behind-Cab Body

(*Continued from page* 31)

of body and cab, also the wheels, can be finished in a light color, while the front fenders and body mouldings should be finished in a complementing dark color. If light and dark colors are not used as suggested, colors of *extreme* contrast must be used, as it is important to place plenty of emphasis on the mouldings, in order to obtain the full benefit of this particular body design, so far as attractive appearance is concerned.

Lettering:—The lettering, too, must be slanted, as shown in the illustration, to correspond with the streamlined design expressed in the exterior body lines and mouldings. It will be desirable to *limit* the amount of lettering used, for best results.

Conclusions:—It is not difficult for the body designer to create lines that are unusual, attractive and utilitarian, but the first concern of the truck user is the load capacity, and other factors then enter the picture, such as design, cost and weight.

Design can be obtained principally by exterior body lines, treatment of mouldings, paint colors, striping-effects and lettering. Good design demands balance of width and height, in relation to body length.

Since the body purchaser generally specifies the inside length, width and height—and perhaps the cubic-foot capacity—the body designer is forced to start with these dimensions to make a good-looking job. Where the specified measurements are out-of-line in regard to good design, the use of moulding, paint colors and striping effects will usually enhance the appearance of such a body, creating the illusion of cutting-down excessive heights and widths, without departing from the original specified dimensions.

In this series of articles the author is endeavoring to hold to conventional body sizes and yet create bodies with good lines and individuality. The next article in this series will offer a van body, built *integral* with a standard cab-over-engine cab. Watch for it!

(*Continued from page* 28)

come similar to those on the 1937 and 1938 Ford cars and it is not necessary to use the special high-friction brake lining furnished for 1935 and 1936 Ford brakes. In fact, it is best to use the car sets built for 1937-1938 Ford brakes, for that is really what the brakes have become.

In servicing 1935 and 1936 Ford brakes it is advisable to grind the lining on the shoes in place in the brake assembly, if a machine for this work is available. This will produce the 100% contact between the brake lining surface and the drum, which is so necessary for good brake action.

The 1937-1938 Ford brakes, shown in Figure 13, have a floating operating wedge similar to the 1935-36 Ford brakes, and in addition, a floating adjustment mechanism at the top, producing a transfer of force from one shoe to the other. For this reason we refer to the shoes of the 1937 and 1938 Ford brakes as primary and secondary just as in a Bendix brake.

The primary shoe in a 1937-1938 Ford brake is the first shoe we come to when we start at the operating mechanism and move in the direction of forward drum rotation. The secondary shoe is forced against the drum by the primary shoe acting through the floating adjusting mechanism.

The 1937-1938 Ford brake is much more effective than the 1935-1936 Ford brake, due to this transfer of force. However, there is not as much force transfer from primary shoe to secondary shoe on these brakes as there is on Bendix brakes. For this reason it is not necessary to use a combination of high and low friction brake lining on the shoes of these brakes. Most friction material manufacturers recommend the use of a fairly high friction material on all shoes of 1937 and 1938 Ford vehicles. Another important change on 1937 Ford brakes was the use of cables to operate the brakes, rather than rods.

There has been some confusion in the brake service field regarding the correct manner in which to install the various colored springs in the 1937-1938 Ford brakes. In each brake assembly there are seven springs and the correct position of these springs may be determined by referring to Figure 13.

It will be noted that there are two long and two short brake shoe return springs. The two short brake shoe return springs are attached at the top of the brake assembly and go from the shoes to the adjusting screw bracket, with the red spring on the primary shoe and the black spring on the secondary shoe.

The two long brake shoe return springs are attached at the bottom of the brake assembly and go from the shoes to the eccentric anchor pin, with the orange spring on the primary shoe and the green spring on the secondary shoe.

Thus we see that starting at the anchor pin and moving in the direction of forward drum rotation the order of the brake shoe return springs is orange, red, black, green. Then there are two short black hold-down springs, one going on each shoe. The last spring is a long, small-diameter, black spring which is attached to the operating return lever.

The eccentric anchor pin is set correctly when the car leaves the factory and generally no further attention is required. However, if the anchor pin adjustment has been disturbed, it may be corrected by using a dummy drum or brake shoe concentricity gauge. With the dummy drum or concentricity gauge installed, the adjusting screw and the eccentric anchor pin should be set to obtain .005" clearance at the upper and lower ends of both brake shoes. If the springs are not correctly installed, the transfer of force will not take place and the brake will be ineffective.

Another cause of hard pedal through reduction in force transfer on 1937 Ford brakes is due to improper setting of the adjusting wedge mechanism. The adjusting wedge is covered by a small metal disc as shown in Figure 13. On the early 1937 models, when the shoes were not in place, it

WE "CROSS" LEATHER AND RUBBER TO MAKE THIS ECONOMICAL UPHOLSTERY—

Genuine U. S. NAUGAHYDE*

Many improvements in nature are achieved by crossing strains. This is the story of a "cross" of two natural materials to give you a better one—at lower cost.

We crush LEATHER and blend it with RUBBER to make NAUGAHYDE upholstery.

Leather makes NAUGAHYDE TOUGH. Rubber makes it lastingly FLEXIBLE, *for more years of crack-free wear!*

Our exclusive TEMPERING process makes NAUGAHYDE luxuriously soft to the touch, yet amazingly resistant to abrasion. See for yourself—we'll send you test samples, in the latest colors. *Write*

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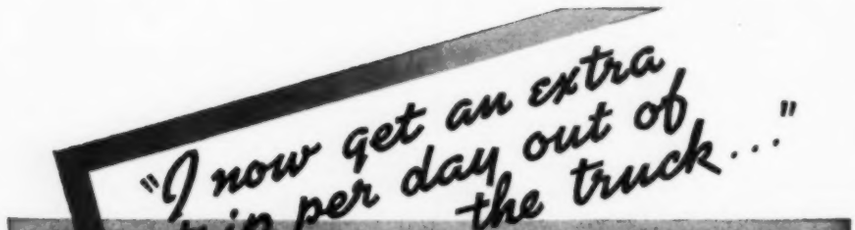
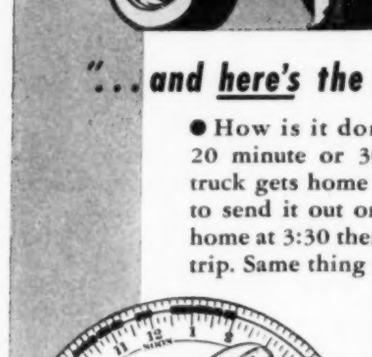


"...and here's the little device that does it!"

● How is it done? Often merely by eliminating a 20 minute or 30 minute delay. Suppose this: "The truck gets home at 4 o'clock, and it doesn't quite pay to send it out on another trip." If the truck had got home at 3:30 then it would have paid to make the extra trip. Same thing at noon: "Here's the truck coming in at 11:15. Well, let's see, it's almost lunch time, so we'll wait till after lunch before we send it out."

This is a thing which happens again and again and generally it doesn't correct itself, until *Servis Recorders* are installed and their charts show daily all wasted time—all delays.

Send today for booklet—"Ten Ways of Getting More Work Out of Motor Trucks."



THE SERVICE RECORDER CO.
1375 Euclid Avenue, Cleveland, Ohio

The Servis Recorder
Been Keeping Trucks Busy for 30 Years

was possible to turn the adjusting nut and destroy the setting of the adjusting mechanism. On these cars, the adjusting nut should not be turned unless the shoes are in place. In case of doubt regarding the correct setting of the adjusting mechanism, it is necessary to remove the metal disc covering the adjusting wedge. The ends of adjustment pin A and B (Figure 13) fit into half-round depressions in the adjusting wedge mechanism. The adjustment pin A (front shoe) should always fit into the smallest depression, with the rear shoe adjusting pin B fitting into the larger depression. This allows both pins to protrude an equal amount from the adjusting wedge housing when the springs are correctly installed.

It is especially important to have 1937-1938 Ford brakes properly adjusted with all slack removed from the brake pedal, in order to obtain the best brake action.

The 1939 and 1940 Ford cars are equipped with hydraulic brakes which are very similar to the Lockheed brakes described in article No. 7 of this series. A left rear brake assembly is illustrated in Figure 14, showing the mechanism which operates the shoes through the hand brake for parking or emergency purposes.

It will be noted that there are no recommended shoe-to-drum clearances given, inasmuch as the Ford Motor Company has developed a method of adjusting these brakes without the use of feeler gauges.

As previously mentioned in these articles, these discussions on the various brake assemblies do not consist of complete instructions for servicing these brakes. Our purpose is to give the oustanding characteristics of each important type of brake so that a mechanic will instantly recognize the brake and its parts. He will also have a knowledge of the history of brake development and understand why a given design of brake naturally followed from the earlier designs.

Complete instructions for servicing and adjusting 1939 and 1940 Ford brakes as well as earlier model Ford brakes can be found in any brake adjustment manual.

●

White "Super-Power"

(*Continued from page* 38)

choke, while all cab-over-engine models have updraft carburetors. The fuel-pump on all engines is placed on the side opposite the manifold location so as to reduce the possibility of vapor-lock. As optional equipment, White offers a patented air-heater for preheating the carburetor inlet air in winter and to reduce power for greater fuel economy where maximum performance is not needed. A miniature radiator forms the heart of the system. It is designed mainly for winter use, to eliminate the necessity for radiator shutters.

The by-pass thermostatic cooling-system and the oil temperature control system are items of importance. The cooling-system is said to insure proper water-flow at all points, as well as even temperature conditions. A special by-pass system is incorporated in the engine which, during the period of warm-up during cold weather, operates contrary to the usual method of restricting the flow through a small orifice. The main body of water within the engine proper is continually recirculated with only a relatively small amount escaping to the radiator, which gradually brings it up to the same temperature as the engine proper.

The oil temperature control unit, with its miniature radiator section, is an integral part of the central system. In cold weather the unit heats up the oil to proper operating temperature, and in hot weather the cooling system functions to *reduce* oil temperature, thereby stabilizing lubricating conditions and insuring more efficient performance.

Five-speed transmissions with direct in fourth or fifth are offered as standard on the large models and

optional on the smaller units. Unless requested, the latter come with four-speed transmissions as standard. The five-speed units bring advantages where grades and long runs are concerned. All White transmission gears are made from alloy steels, carburized so that the surface is extremely hard, with the center of the gear tough and resilient, giving it strength against shock.

Full-floating double-reduction rear axles are offered as standard on the WA-26 and WA-34 series trucks and optional on all other models. The latter, unless otherwise specified, come with full-floating, single reduction axles as standard. White axle shafts are of high carbon alloy steel, heat-treated for strength with hardness. Strong rigid housings are designed to hold the shafts, bearings and gears in correct alignment.

Two-speed axles are offered as optional equipment on either conventional or cab-over-engine models of the new White line. They are of the double-reduction type having two sets of wide-faced, helical second-reduction gears, providing two different ratios. The two helical pinions float on the countershaft and are engaged selectively by a sliding clutch. The two-speed axle permits handling many grades beyond the fast axle ratio without changing transmission gears.

All models of the White "Super-Power" line, with the exception of the WA-34, have hydraulic brakes as standard equipment, with Westinghouse air brakes available as optional equipment. Air brakes are standard on the WA-34. Dual vacuum-power cylinders are provided on some of the hydraulic brake jobs.

Not only does the new line of White "Super-Power" trucks bring many new features, but the element of interchangeability is highly important. This applies to a very extensive list of basic parts on all models from the largest to the smallest. Parts which are readily interchangeable include fuel-pumps, water-pumps, fans, generators, fan-belts, pulleys, thermostats, oil-pumps, oil-pans, oil-filters, camshaft and timing gears, crankshaft main bearings, spark plugs, batteries, air-cleaners, valve-springs, inlet and exhaust manifolds of either updraft or downdraft lines. This is but a partial list of things which are interchangeable throughout the line.

In addition, there are many items which are interchangeable between various models. For instance, the inlet valves on three out of four engines are the same, and likewise, the connecting-rod bearings, crankshafts and fuel tanks. Starting motors are the same for the 100A and the 110A, and for the 120A and the 140A respectively.

Such standardization should greatly simplify the work of the fleet maintenance department and lower the costs of distribution where more than one model is used. . . For your free copy of interesting literature covering the new White "Super-Power" line, write to George Scragg, c/o White Motor Company, Cleveland, Ohio, mentioning FLEET OWNER, please.

•

Name Oct. 6-12 as Fire Prevention Week

THE United States will observe Fire Prevention Week this year during the week of October 6 to 12. . . . It is pointed out that under present industrial conditions, with production on the upward curve, there is a need for tightening of our defenses against fire. . . . The fire record shows that the incidence of fire increases as production increases. . . . Our national defense requires special precautions to guard against the arsonist and the saboteur. . . . All industry is urged to participate.

•

Chevrolet August Sales Indicate Gain

DURING the month of August a total of 63,116 new passenger-cars and trucks were sold by Chevrolet dealers throughout the country, an increase of 29.2 per cent over the same period last year. . . . Truck sales for the month were 16,538, an increase of 30.4 per cent over 1939, according to Wm. E. Holler, general sales manager.

Pyrene

Announces a SAFETY-SERVICE FOR FLEETS

It is good business to depend upon tire chains for safety because it is good business to maintain schedules and to avoid damages to vehicle and load. Your Pyrene tire chain jobber will help you make winter operations doubly safe and extra sure by supplying your chain needs and authentic warnings of impending storms.

He'll provide Pyrene chains from his complete stock which includes Standard, Extra Heavy, and Doubleduty Bar-Reinforced types in single and dual sizes.

"Go as far as you like" on Pyrene chains with the positive knowledge that no chains made would take you farther. This enduring service is assured by uniformly case-hardened cross chains and perfectly welded side chains. The Pyrene Easy-on Easy-off lock saves time and trouble.

Pyrene has retained Krick Industrial Weather Service, headed by Dr. I. P. Krick of California Institute of Technology, to provide monthly and short range chain-weather forecasts for all Pyrene jobbers and dealers. Wherever Pyrene chains are sold, these forecasts are available. Leading air lines, movie studios, and public utilities rely upon it, too. Have your drivers check on the weather where the Pyrene sign is displayed.

Use Pyrene Doubleduty chains with Bar-Reinforced links for double mileage at lower cost.

Pyrene Manufacturing Company
NEWARK NEW JERSEY
ATLANTA KANSAS CITY CHICAGO SAN FRANCISCO

KEEP GOING

When Others Have to Quit!

Install

THORNTON

Automatic-Locking

DIFFERENTIALS

TRACTION

When and where you need it—Keep Going when mud, sand, ice and snow stall trucks with only ordinary differentials.

Save gas, oil, tires, chains—Cut operating cost

Eliminates spinning of one drive wheel because both rear wheels must rotate when power is applied. Quickly installed in standard rear axle differential carrier, without special tools.

Endorsed by truck and bus operators all over the U. S. A.

THORNTON TANDEM CO.

8701-8779 GRINNELL AVE. DETROIT, MICH.

Makers of THORNTON four-rear-wheel DRIVE for trucks

"When you need TRACTION you need THORNTON"

Board Pays Tribute to Chrysler

AT a recent meeting, the Board of Directors of Chrysler Corporation adopted the following minute on the death of the late Walter P. Chrysler:

"Walter P. Chrysler was a pioneer in life as he was in industry. His own development was typical in many ways of America.

"His early days, close to the American frontier, helped to fire his imagination; gave him the determination to realize his boyhood dreams of what could be done in such a land. From his birth and training he derived abundantly the inspiration, the energy and the capacity to accomplish.

"He had the initiative, courage, resourcefulness, and leadership to make dreams come true.

"Walter P. Chrysler was a builder. . . . He built men as well as things.

"He built with both hands and brain, putting his sterling integrity into what he made.

"He got his start in overalls; made his first kit of tools himself; his whole life symbolized the dignity of work.

"His vigor was always tempered with the milk of human kindness; his energy was accompanied by an understandingly generous heart; his leadership not only inspired admiration but gave to all privileged to be associated with him an affection for this strong man capable in the strife of great accomplishments of such genuine, sincere friendship.

"The whole organization which bears his name breathes the inspiration made upon it by these qualities. . . . They yield a lasting heritage.

"Because Walter Chrysler built well, the things he stood for so steadfastly in his organization will endure. To us his memory will be an inspiration and a blessing."

The directors also amended the by-laws of the Corporation by discontinuing the office of Chairman of the Board, thus making the President the Chief Executive of the Corporation. K. T. Keller has been President for five years and for more than two years, since Mr. Chrysler became ill in May 1988, has been responsible for the Company's operations.

Herman L. Weckler, Vice President and General Manager of Chrysler Corporation, was elected to the Board to fill the vacancy.

•

New Nash Car

(*Continued from page* 47)

The interiors are provided with woolen upholstery in duo-tone combinations to harmonize with the exteriors. Instrument panel has all instruments and knobs carefully grouped for safe and easy accessibility.

The Nash "Ambassador 600" is the king-pin of a wide-range group of fifteen Nash automobiles in three series that are expected to cover 92 per cent of the U. S. passenger-car market. Heretofore, Nash did business in only 35 per cent of the market, and as a result of the new move, Nash hopes to at least double its 1940 sales.

Nash also expects to make a serious bid for fleet business with its new "Ambassador 600" which we have illustrated and described here. It was designed, according to Nash engineers, with the economy and performance requirements of fleet operators in mind.

Interesting literature that fully illustrates and describes this new "economy" car, is now ready. Complete technical specifications are also included. . . . For your free copy address W. A. Blees, c/o Nash Motors Division, Nash-Kelvinator Corporation, Detroit, Mich., mentioning this announcement in FLEET OWNER for a prompt reply.

•

New York Auto Show This Month

THIS Year's National Automobile Show will be held at Grand Central Palace in New York during the period of October 12 to 20, inclusive. . . . As usual, the truck exhibits will be complete and up-to-the-minute. . . . A special "Old Timers' Day" will be held on Wednesday, October 16, and will feature a luncheon that will be attended by many of the automobile industry's pioneers.

Dodge 1941 Trucks

(*Continued from page* 45)

shaft flange to the hub on 1½ and 2-ton models.

To facilitate handling of heavy-duty models, both gas and Diesel-powered, a new 10-inch booster-brake cylinder, which reduces the amount of foot-pressure required for brake application, and a 19-inch diameter steering wheel, which provides greater leverage, have been provided.

Seat and back cushions in all truck cabs are completely redesigned to provide greater durability and driver comfort. Improvements include double-cone coil springs, with helical cross-tie lacings, heavier construction of cross-braces in seat cushions, and thicker padding between springs and upholstery material, which conforms more comfortably to body contours. New, durable upholstery material is thirty-ounce rubber-coated sateen of two-tone brown, finished in Morocco grain. Interior trim is in brown to match. Diesel cabs are upholstered with brown leather.

Cab door latches of heat-treated steel are thicker and stronger, to reduce wear and to hold doors securely shut, even when operating conditions subject cabs to severe strains.

Panel and canopy bodies have a new design bucket seat which is wider, with a higher steel back, heavily padded and spring-cushioned for driver comfort. This seat tilts and is adjustable forward and backward to provide comfort for any size driver.

Numerous improvements have been incorporated in panel bodies with particular attention being paid to thorough sealing against dust and water. Pickup and canopy bodies have improved tail-gate chain brackets, designed to increase rigidity of the bodies at this point.

Completely redesigned stake and platform bodies incorporate many important advancements designed to give greater durability. Stakes and stake pockets are improved in design to fit better and provide greater strength. Cross sills are deeper, skid rails, and corner braces heavier. Wear plates have been added between the stake and the front and rear cross sills.

A new auxiliary 6-volt generator has been provided as standard equipment on Dodge 1941 heavy-duty Diesel trucks and furnishes ample current for lights, instruments and dual horns. The auxiliary generator is especially important when operation requires special lighting of trailer equipment, etc. A 24-volt primary generator and starting motor assures power for starting in any weather. The cooling system has been improved for effective operation in tropical climates. New, too, is a dome-light mounted above the rear window of the cab in Diesel models. The center group of instruments on the panel is also lighted. A tachometer is provided as standard equipment.

Every model in the new Dodge truck line is equipped with such features as "Equal-Pressure" hydraulic brakes, roller bearing universal joints, rust-proofed cabs and sheet metal, and rigid channel-type front bumpers.

The new one-half ton models are offered on a 116-inch wheelbase; ¾-ton, on 120-inch wheelbase; 1-ton, on 120 and 133-inch wheelbase; 1½-ton regular models, on 126½, 135 5/16, 160 and 190-inch wheelbase; 1½-ton cab-over-engine models, on 105, 129 and 159-inch wheelbase; 2-ton regular trucks, on 136, 148, 160, 178 and 220-inch wheelbase; 2-ton cab-over-engine models, on 105, 129, and 159-inch wheelbase; heavy-duty gas and Diesel-powered trucks on 152, 170, 188 and 205-inch wheelbase.

Six different engines are used to power the 1941 line of Dodge trucks.

There are seventeen different rear axle gear-ratios, twenty-three different frames, four clutches, six brake combinations, ten basic spring combinations and eight rear axles.

●

N. Y. World's Fair Honors N.H.U.C.

FRIDAY, October 18th, has been set aside by the New York World's Fair as "National Highway Users Conference Day". . . . A special highway users' program is being planned.

STEWART-WARNER
ELECTRIC FUEL PUMP
PREVENTS THIS...

Built by the Pioneers of Fuel Delivery Systems

This Model 110-D Stewart-Warner Electric Fuel Pump is backed by 25 years' experience in the manufacture of fuel delivery systems, and is, we believe, the finest fuel pump yet offered. Bears full approval of Underwriters' Laboratories, Inc.

No more vapor-lock troubles! Trucks equipped with Stewart-Warner Electric Fuel Pumps just naturally don't have 'em! Mounted back at the fuel supply tank, *away from the heat of the motor,* this pump pushes fuel up to the carburetor under pressure—completely and permanently eliminating the usual cause of vapor-lock.

It's fool-proof! It's trouble-free! Contact points are sealed in a hydrogen-filled glass tube, so there can be no sticking, pitting, or burning of points. The new Stewart-Warner Electric Fuel Pump delivers 15 gallons per hour on less than 1 ampere of current! *There is no piston, and no rotating action.* Consequently wear is minimized, resulting in long life for the pump.

Let this amazing pump help keep your trucks rolling—help you cut down road calls and expensive schedule interruptions. You'll find it actually reduces operation and maintenance costs, too! Mail coupon today for complete information!

STEWART WARNER
ELECTRIC
FUEL PUMP
STEWART-WARNER CORPORATION
1831 Diversey Parkway • Chicago, Ill.

STEWART-WARNER CORPORATION
1831 Diversey Parkway, Chicago, Ill., Dept. J
Please send complete facts about the new Stewart-Warner Electric Fuel Pump for trucks.

Name.....
Address.....
City.....*State*.....
Firm Name.....

Body designs copyright E. M. Westburg
Build Your Bodies
AROUND HANSEN HARDWARE
—as Modern as
the Most Modern Body
HANSEN HARDWARE has the unusual combination of modern design adaptable to the most modern bodies—and ruggedness of construction, to withstand the most severe commercial body service. Make this combination your standard for easy installation and dependable service.
Ask for Catalog
No. 60
No. 66
HANSEN
HARDWARE for Commercial Bodies
No. 12 Leaf-Type Hinge
No. 60 Extension Lock
No. 66 Refrigerator Lock
No. 85 Window Regulator
No. 111 Heavy-Duty Lock
No. 117 Three-Point Slam-and-Take-up Lock
No. 12
No. 111
No. 117
No. 85
A. L. HANSEN MFG. CO.
5043 Ravenswood Ave.
CHICAGO, ILL.
THE HARDWARE FOR HARD WEAR

Ford 1941 Trucks

(*Continued from page 40*)

Two optional hydraulic hoists are offered on the 134-inch wheelbase dump truck. One is an arm type, the other a direct-lift type. Body capacity is 1½ cubic yards. Auxiliary springs are included as standard equipment. Dual wheels, heavy-duty tires, two-speed axle and reinforced frame are available at extra cost.

For tractor-trailer operations, the 134-inch wheelbase regular and the 101-inch wheelbase cab-over-engine trucks are available as cab-and-chassis with shortened frames at no extra cost, ready for fifth-wheel installations.

Operators who wish to use bodies built by other manufacturers will find that all Ford units are conveniently available as chassis with cab, and all except the cab-over-engine types as chassis with windshield or chassis with cowl.

A school bus chassis with 194-inch wheelbase and available with either the 85 or 95 horsepower V-8 engine, brings the number of chassis and body types in the new 1941 Ford line to forty-two.

Three-quarters and one-ton trucks with the 85 horsepower engine are equipped with a 3-speed transmission. A 4-speed transmission is standard with the 30 horsepower engine, and optional at extra cost in 85 horsepower units on these types.

For haulers with special operating conditions to meet, a factory-installed two-speed axle is available at extra cost on "regular" and cab-over-engine trucks. It has a low-speed ratio of 8.11 to 1, and a high-speed ratio of 5.83 to 1.

The "Shiftoguide" speedometer is again listed as an important aid to economical operation of Ford "regular" and cab-over-engine trucks. It shows drivers when to shift gears in order to obtain maximum pulling ability and economy with minimum engine wear.

The conventional Ford cab features stronger and more durable construction. The upper portion of cowl, windshield opening and complete roof panel are formed in a single stamping, eliminating the joint above the windshield. Reinforcing the inside of this large stamping at the front is another one-piece stamping comprising the instrument-panel, vertical side pieces and windshield header. Welded together these stampings form a strong box section.

The cab also features a steel toeboard and a one-piece steel floor welded to the body all around. The cab interior is neatly trimmed and the roof is lined.

•

Highway Transportation Day, Oct. 12th

"HIGHWAY Transportation Contributes to National Defense" will be the topic discussed by nationally prominent speakers at the 7th Annual National Motor Truck Show banquet to be held October 15 at the Commodore Hotel in New York City. . . . A special program will also be presented at the Court of Peace, featuring "National Highway Transportation Day" at the New York World's Fair, this latter event to take place on October 12. . . . A huge parade is planned, to consist of motor trucks and other vehicles of automotive transportation, which will carry descriptive floats. The great cavalcade will proceed from 23rd Street, New York, to the fair grounds, terminating at the Court of Peace.

•

SERVICE-PROVED
GRUELING years of toughest service prove Blackhawk Hydraulics superior in safety, rugged dependability and utility. "Service — Proved" Seal found only in Blackhawks. Only complete line of hydraulic hand jacks — 20 models—1 to 75 tons capacity.
BLACKHAWK MFG. CO.
Dept. J7100, Milwaukee, Wis.
BLACKHAWK

WAUKESHA
Multi-Fuel
ENGINES
•
DIESEL OIL
GASOLINE
BUTANE
ALL LIQUID OR GASEOUS FUELS

New Sealed Power Appointments

ANNOUNCEMENT of the election of Raymond R. Beardsley as secretary and Neil A. Moore as vice-president of the Sealed Power Corporation, Muskegon, Mich., is made by the directors of the company. Both men are veterans in Sealed Power service. . . . Mr. Beardsley succeeds his father, Paul R. Beardsley, who asked the directors to relieve him of some of his duties. The latter, one of the founders of the corporation, will continue to serve as treasurer. His son was formerly assistant secretary and treasurer, and has worked closely with his father for many years. . . . Mr. Moore has been general manager of the corporation for the past four years. He joined Sealed Power in 1924 as metallurgist and chemist, after graduating from the University of Michigan in 1922 and serving Continental Motors Corporation for a short period.

•

Wilson Now Brunner Phila. Representative

BRUNNER Manufacturing Co., Utica, N. Y., announces the appointment of Frank E. Wilson as sales representative in charge of the Philadelphia territory. . . . He will headquarter in Philadelphia, and will cover southern New Jersey, Delaware and Pennsylvania as far west as Altoona. . . . Mr. Wilson has been with Brunner for the past two years as special field representative on both the refrigerator and compressor lines.

•

National Fire Prevention Week This Month

OCTOBER 6 to 12 has been designated as National Fire Prevention Week, sponsored, as usual, by the National Fire Protection Association. . . . Fire prevention is the prime objective of this organization.

•

Kellogg Division Announces Promotions

CONTINUED expansion within the Kellogg Division has made necessary the following additional personnel changes: H. O. Holland, formerly eastern district sales manager, has been transferred to Rochester, and will now become general sales manager. . . . Curtiss Main, who formerly handled the Philadelphia territory, will now be transferred to the New York office, and will handle the New York district. . . . Frank M. Wilson has been appointed district manager of the Philadelphia district, covering the state of Maryland, District of Columbia, southern New Jersey and eastern Pennsylvania.

Congress Passes "Rail Relief" Bill

LEGISLATION was completed by Congress on September 9th, on the so-called railroad relief bill, S. 2009, the bill going to the White House for approval by the President. . . . The bill is known as The Transportation Act of 1940. It amends Part I (railroads) and Part II (motor carriers) of the Interstate Commerce Act, and adds Part III which regulates water carriers. . . . A third title of the Act embraces three miscellaneous matters and provides for a board of investigation and research to investigate all matters regarding the three types of transportation.

Dodge Truck Sales Chief Is Optimistic

"WE HAVE every reason to be optimistic about the business outlook in this country," said Lee D. Cosart, recently appointed sales manager of the truck division, Dodge Brothers Corporation. . . . He cited the fact that business in the United States held solidly to its ground during the first half of 1940, despite the impact of international events. . . . Mr. Cosart foresees truck production, by the entire industry, far in excess of the 559,000 units, which has been the industry's average for the past five years.

"AND EVERY GOVERNOR IS ENGINE TESTED AND CALIBRATED ON THE DYNAMOMETER"

An exclusive Hoof feature
...accurate control guaranteed

Yes, every Hoof Special Calibrated Governor is engine tested on the dynamometer for power, performance and accurate control before it leaves the factory.
Conditions under which the governor will operate in actual service are duplicated in our laboratories—so there can be no question about the governor performing as it should . . . with no loss of power or acceleration.
Another feature that provides additional savings is the pre-setting of Hoof Governors to road speed . . . at no extra cost . . . which does away with road testing.
Hoof Governor performance and durability always have been outstanding . . . greatly enhanced in the new "streamlined" simplified compact model—with in-built positive spark control transfer. Smaller in size it makes an easier installation and is more adaptable than ever to the vehicles you operate.
Regardless of your operation Hoof Governors will do the work better. All we ask is a chance to prove it.

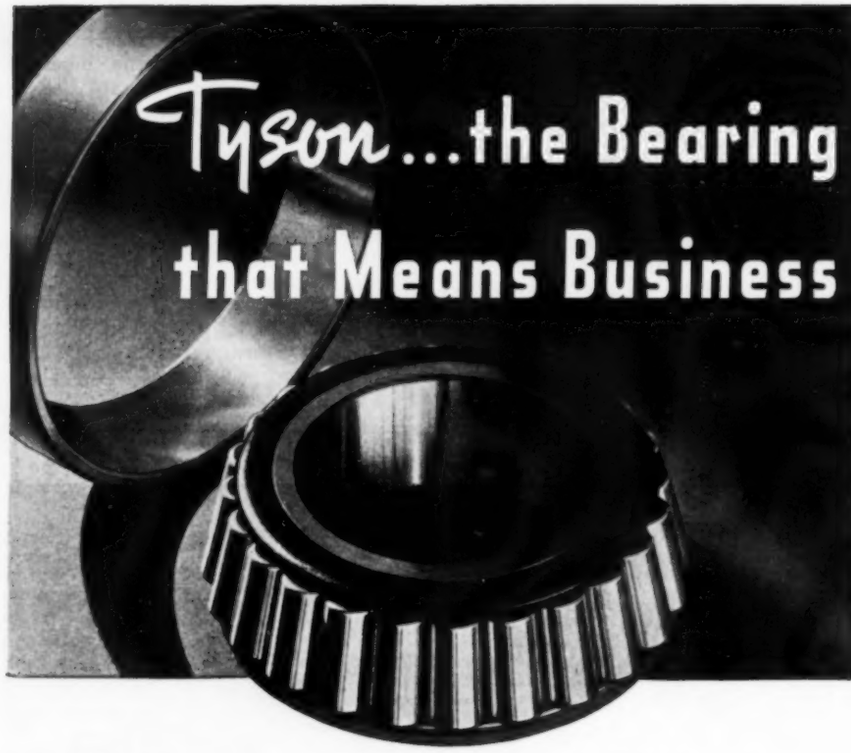
Star attractions

★ FACTORY SET . . . No road testing necessary.
★ STAINLESS STEEL PARTS . . . No corrosion or sticking.
★ CANTILEVER SPRING No stretch or fatigue.
★ ALUMINUM BODY No warping or distortion.
★ DIAPHRAGM CONTROL No "cheating."
★ 3 BALL BEARING No friction.
★ POSITIVE SPARK CONTROL
★ NO ACCELERATOR LOSS
★ FULL POWER

One of the two Hoof Dynamometer and Testing Laboratories where every special calibrated governor is engine tested.

SEND FOR YOUR COPY OF "QUESTIONS AND ANSWERS"

HOOF PRODUCTS CO., . . . 6543 S. Laramie Ave., CHICAGO, ILL.
Makers of the FAMOUS HOOF CANTILEVER GOVERNORS.



● One look at a Tyson *Cageless* Bearing, and you know it means business.

● *All rolls* . . . no cage to cause trouble. *All rolls* . . . thus maximum capacity (about 30% more than interchangeable cage-type bearings). *All rolls* . . . double the average bearing life. *All rolls* . . . most rigidity.

● No wonder customers say "It's good business to tie up with Tyson!"

Cageless FOR HARD SERVICE *Cage-type* FOR REGULAR SERVICE

Tyson

TYSON ROLLER BEARING CORPORATION, MASSILLON, OHIO

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Handy Governors Will CUT Your

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Because excessive speed is an important contributory cause of accidents, Handy Governor control will reduce your accident rate and thus make another worth while saving.

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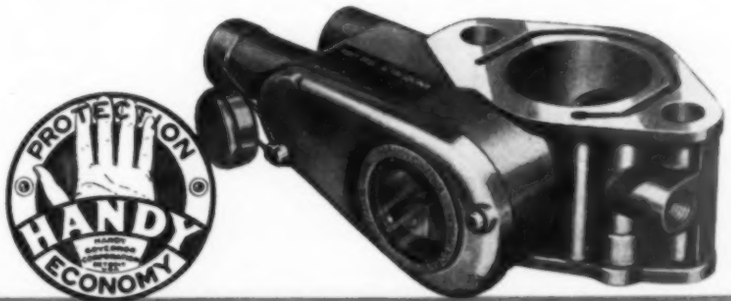
KING-SEELEY CORPORATION

Ann Arbor, Michigan



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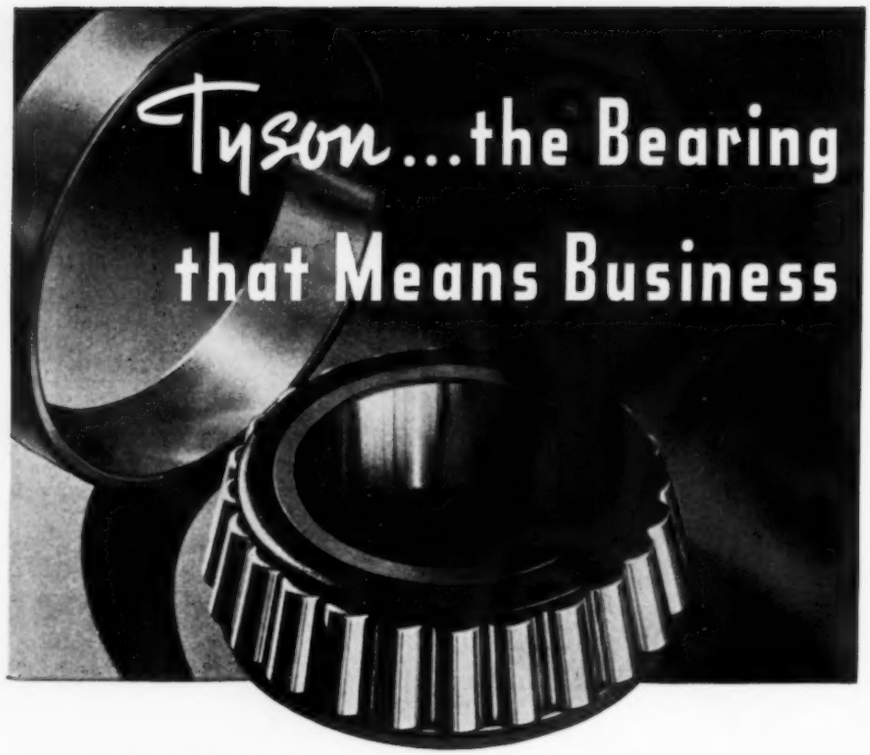

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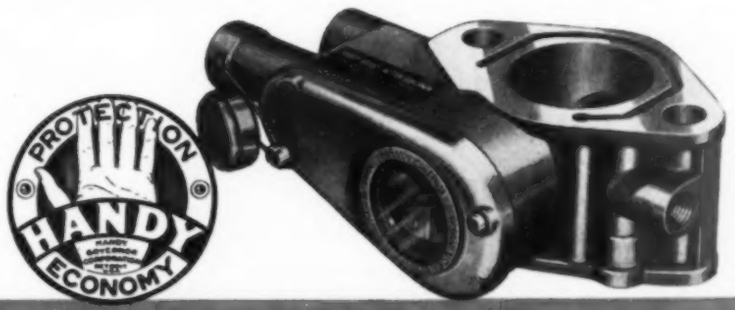

HANDY *Visible Action* GOVERNOR

WORLD'S LARGEST MANUFACTURERS OF AUTOMOTIVE GOVERNORS

"Just as soon as we started using this Kester Radiator Solder we cut all the grief out of this kind of repair work. The way we used to fix radiators we weren't sure they'd stay fixed. Now we know they will because they never come back for do-over jobs. This Kester Solder sure does its stuff!"

Here's a man who knows his business. He believes in Kester Radiator Solder because he sees the great results it gets on the trucks in his fleet. And here are the reasons back of the results:

Kester Radiator Solder is scientifically designed for this important type of work. It is especially compounded of a freer flowing alloy that withstands the temperature extremes of heavy-duty truck service. And it contains a special, more active flux that is exactly right for radiators.

Keep your fleet radiators on the O.K. list and eliminate costly repeat jobs with Kester Radiator Solder. It will help you keep your repair costs down.

KESTER SOLDER COMPANY

4233 Wrightwood Avenue — Chicago, Illinois

Eastern Plant: Newark, N. J.

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KESTER RADIATOR SOLDER

I. C. C. Studying Size and Weight Limits

UNDER the terms of Interstate Commerce Commission order dated November 8, 1937, as amended, the Division of Safety, Bureau of Motor Carriers, is engaged in an investigation of the laws and regulations governing the size and weight of motor vehicles in the several states. Section 225 of the "Motor Carrier Act, 1935," authorized the Commission to investigate this subject and to submit a report to Congress on the need for Federal regulation.

A preliminary report of 660 mimeographed pages has recently been released. It is without specific recommendations or conclusions and is published without formal or official approval of the Commission. It is divided into three parts described as follows:

Report No. 1: State limitations of sizes and weights of motor vehicles; an analysis of the statutes of every state, together with administrative rulings and interpretations. This also gives a brief resumé of the historical development of state, municipal and other local governmental limitations.

Report No. 2: Road facilities and vehicles used in highway transport; shows the extent of road systems, their improvement, surfacing, types and range of use. This also presents detailed data as to vehicle characteristics drawn from statewide highway planning surveys.

Report No. 3: Sizes and weights of motor vehicles in relation to highway safety.

Other reports dealing with engineering aspects, legal considerations, and the economic phases, are still in progress for early release.

The published report is a constructive and exhaustive accumulation of factual data, and the facts developed demonstrate the need for removal of the present confusion resulting from lack of uniformity among the states, and also the removal of punitive restrictions against larger vehicles in several states.

An amended order dated August 28, 1940, provides that any party who desires to file a statement of his position or comments or criticisms of the preliminary reports, shall do so in triplicate on or before November 10, 1940.

●

Motor Taxes Set New "Speed Record"

MINUTE after minute, in daylight and darkness, throughout each twenty-four hour day America's motor vehicle owners are paying special taxes at the rate of $4,799,520 a day, $3,333 a minute, or $55.55 a second, the American Petroleum Industries Committee estimates. These taxes include all federal, state, and local taxes paid by virtue of motor-vehicle ownership.

State and federal gasoline taxes are by far the heaviest of these special highway taxes, amounting to $35.10 a second, or $2,106 a minute. Registration and license fees are being paid at the rate of $819 a minute; and federal excise taxes, exclusive of the gasoline tax, amount to $271 a minute. Miscellaneous other motor-vehicle taxes, tolls, and fees add another $137 a minute.

"It may not aid digestion, but it is true, nevertheless, that for every one of the three meals a day eaten by motor-vehicle owners, $1,599,840 is paid in special highway user taxes," the Committee said. "Nor will sufferers from insomnia be lulled to sleep by brooding over the fact that they and other automotive taxpayers are paying special taxes at the rate of $1,750,000,000 a year."

Motor Tune-Ups Minimize Road Failures

ONE out of every three motor vehicle failures on the highway can be avoided by a systematic check-up of the motor, according to engineers of the Ethyl Gasoline Corporation.

Motors should be tuned up after every 5,000 miles of driving, declared the engineers, who studied the problem of breakdowns in connection with the operation of a nationwide network of Ethyl clinics.

Data assembled by the American Automobile Association are cited to show that of the more than 10,000,000 calls annually for emergency road service, about 33 per cent involve difficulties with the starting and continuous operation of the motor. About 13 per cent are due to the battery, 12 per cent to ignition trouble, and 3.8 per cent to starter difficulties.

"Mishaps in these categories are not accidental," it is pointed out by John G. Martin, national director of the clinics. "They can be prevented by thorough periodic inspection. A modern motor tune-up includes a check of the battery, spark plugs, cables, carburetor, and the gasoline lines, as well as a scientific adjustment of the timing so the gasoline will deliver full power. Such a check-up should show the condition of these parts so that replacements can be made to avoid a breakdown along the highway, perhaps miles from a garage."

•

Some Data on Government Vehicle Ownership

GOVERNMENTAL use of automobiles, trucks, and buses has increased enormously in the past ten years, Baird H. Markham, director of the American Petroleum Industries Committee, declared recently.

The number of publicly-owned government vehicles has risen ten times as fast in the past decade as have motor vehicle registrations generally, he said. Official figures indicate that there were 394,783 publicly-owned motor vehicles in operation last year, of which 121,270 were owned by the federal government, and the remainder were the property of states, counties, and municipalities.

"Some idea of the extent to which motor vehicles have become important instruments in the functioning of our federal, state, and local governments may be derived from the fact that nearly one-half billion gallons of motor fuel were consumed by vehicles in the performance of public duties," Mr. Markham said.

The federal government last year owned approximately four times as many motor vehicles as it owned only a decade ago, while the number of vehicles owned by state, county, and municipal governments has been more than doubled. While the number of governmental vehicles was rising 161 per cent, the registrations of privately-owned vehicles, which last year was 30,615,087, rose only 15½ per cent."

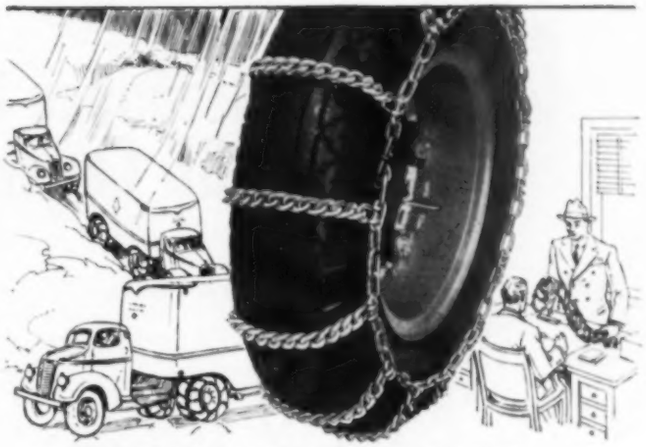
•

Move 90% of Livestock by Motor Truck

CALIFORNIA'S 18 leading livestock counties move 90 per cent of the stock to market by motor truck.

Even this big percentage is being increased by the development of trucks powered with Diesel engines, which makes it more practical to extend operations into remote mountain counties and adjoining states.

The chief advantage claimed by shippers is faster movement enroute with consequent diminished shrinkage, and the convenience of being able to have loads picked up by truck at the ranches and taken direct to the point of destination without trans-shipment.



CHAIN DOLLARS—
and TRUCKS go farther
with CLAW TRUCK CHAINS

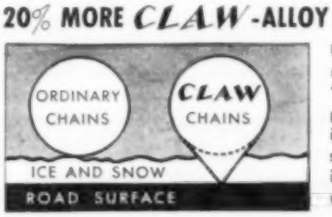
- 20% more steel in every cross link for greater mileage.
- Exclusive CLAW grip bites into ice and snow for positive traction and safety.
- Indented Rim Chains eliminate play and minimize breakage.

CLAW GRIP

Chain dollars and trucks go farther with CLAW Truck Chains because CLAW chains are super-built to withstand the "gaff" of the severest truck service. Look at these exclusive features that have earned CLAW chains the reputation of "Tough Guy" in some of the hardest assignments on the road. Patented CLAW grip that bites in at the point of traction effectively out-grips any chain on the market... gets trucks through regardless of road conditions.

● CLAW-Alloy steel, toughest chain metal known, multiplies chain mileage. ● Special Indented rim chains prevent play and excessive breakage between cross and rim chains. ● Improved Blue Boy fastener snaps on quickly, easily... can't work loose. Specify CLAWS all around. They'll cut your chain costs down and bring trucks through on schedule because they're made for a steady diet of abuse. Single and dual, all sizes. Write today for catalog.

20% MORE CLAW-ALLOY STEEL IN THESE KNIFE EDGES



Unlike the ordinary round link that rides on top, the protruding CLAW "V" bites into ice and snow for a positive grip that can't slip. There is actually 20% more CLAWing Alloy steel in every CLAW cross link and it is concentrated where it does the most good...at the point of traction.

COLUMBUS-McKINNON
Chain CORPORATION

General Offices: TONAWANDA, N. Y.

Plants at ST. CATHARINES, ONT., CAN. and VEREENIGING, SO. AFRICA

Cut the Maintenance Costs that SLUDGE Causes!

GET YOUR COPY

This new collection of performance reports from users of Magnus Met-affin and other Magnus Automotive Specialties tells you the results they are getting compared with previously used methods and materials.

Don't forget that sludge in a truck motor does a lot more damage than robbing you of power and compression by sticking valves and rings. When it clogs an oil line anywhere, the part it lubricates is apt to fail. When sludge prevents oil from doing its job anywhere in a motor—breakdowns and repair costs are sure to follow.

Stop all your sludge costs with

MAGNUS MET-AFFIN

Use it regularly to control and inhibit sludge and varnish formation, you'll find, like hundreds of other fleet operators, that many of the repair costs you have come to regard as routine will stop, while your motors will show the steady, reliable performance in power, in gas and oil consumption that you have a right to expect from a sludge-free motor.

MAGNUS CHEMICAL COMPANY

Manufacturers of Cleaning Materials, Industrial Soaps, Metallic Soaps, Sulfonated Oils, Emulsifying Agents and Metal Working Lubricants

36 South Avenue — Garwood, N. J.

MAGNUS CLEANERS

Safety Congress in Chicago This Month

THE 29th National Safety Congress and Exposition, sponsored by the National Safety Council, will be held in Chicago, October 7 to 11, inclusive. . . . As usual, the program will include many papers on pertinent fleet subjects, including maintenance, safety and legislative topics. . . . Sessions will be held at the Stevens Hotel.

•

Goodyear "Chemigum"—Synthetic Rubber

IMMEDIATE, substantial increase in facilities for the manufacture of the company's "Chemigum" synthetic rubber, was announced recently by Goodyear Tire & Rubber Co., Akron, Ohio. . . . For the past three years the company has been developing and producing this product in its laboratories and in a small pilot plant. . . . A new plant is being opened, to have an initial capacity of 10,000 pounds per day. . . . "Chemigum" is derived from petroleum, through a cracking process, made out of four basic compounds.

•

Walter C. Marmon Passes Away

THE DEATH of Walter C. Marmon, Chairman of the Board of Marmon-Herrington Company, Indianapolis, was announced with regret last month. . . . Mr. Marmon passed away on August 29th last, at his home in Brendonwood, Indianapolis, Ind.

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***BURN-OUT* PROOF SWITCH**

The only burn-out proof directional signal switch. Install with a complete set of Signal-Stats or as a replacement for any make of directional signals.

DIRECTIONAL LAMPS

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Unconditionally GUARANTEED!

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Risk Joins Ethyl Gasoline Staff

THOMAS H. RISK, for the past five years with the Pure Oil Company, has joined Ethyl Gasoline Corporation in the Refinery Technology Division, it was announced last month by William H. Hubner, in charge of that division. . . . Mr. Risk will extend the technical service offered to Ethyl's refinery licensees through contact with refiners, and will assist in coordinating automotive research activities at Ethyl's Detroit and San Bernardino enginering laboratories with trends in refinery procedures.

WAUSAU Oil-Savr

The Free-Running Ring with the Safety Center Unit

FREE SAMPLE RING

Write

WAUSAU MOTOR PARTS COMPANY
1600 HARRISON BLVD.,
WAUSAU, WIS.

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FOR— AUTOMOBILES TRUCKS TRAILERS AND BUSES

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New Kingham Light Weight

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America's Greatest Trailer Value!

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BY MEN WHO KNOW FLARES BEST

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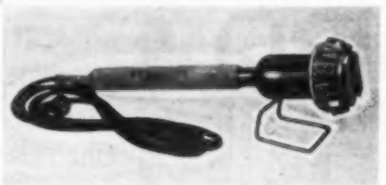
SEE YOUR JOBBER TODAY

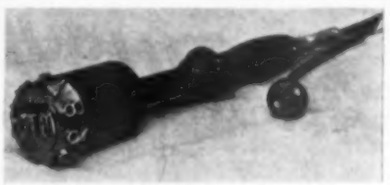
HOW TO END YOUR TIRE "HEADACHES" FOR $20



No. 59 Everhot Electric Tire Numbering Disk . . . Supplied with 1" or ¾" numbers. All ten digits (0 to 9) are on the disk, making possible any combination of numbers desired. Face of disk has room for several letters for initialing purposes . . . Priced at $35 complete, f.o.b. Maywood, Ill., plus $1 per letter for initials on the face of the disk.

HERE'S HOW:

- TAKE these two easy steps and watch your tire "headaches" fly right out of the window—and your tire costs drop to lower levels:
- 1—IDENTIFY every tire in the fleet by numbering it with either of these factory-approved electric tire branders. Take your choice of the two models shown.
- 2—INSTALL the Everhot Tire Record System, furnished FREE with either of these branders—a simple and effective system.



No. 58 Everhot Electric Tire Numbering Disk . . . Supplied with ⅝" numbers, or smaller. Digits 0 to 9 are on the disk, making possible any combination of numbers desired. Face of disk has room for several letters for initialing purposes . . . Priced at $20 complete, f.o.b. Maywood, Ill. This price includes one engraved letter on the face.

FREE 10-DAY TRIAL . . . Either of these Everhot Branders will be sent to fleet operators, on request, for 10-day trial. 2% discount allowed if check comes with your order . . . Take no chances! . . . Your money will be CHEERFULLY refunded if for any reason you decide not to keep this equipment after giving it a fair trial.

Illustrated Literature Will Be Cheerfully Sent in Advance, If You Prefer

EVERHOT MFG. CO., MAYWOOD, ILL.

Finest Subway Entrance to World's Fair

New York's Popular

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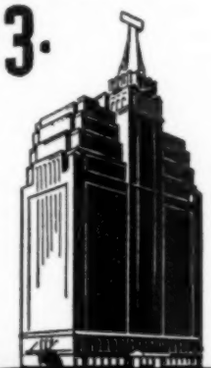
44TH TO 45TH STS. AT 8TH AVE.

1400 ROOMS *from* **$3.**

Each with Bath, Servidor, and Radio. Four fine restaurants acclaimed for cuisine.



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HOTEL EDISON
SAME MANAGEMENT

IN THE CENTER OF MID-TOWN NEW YORK

Why **HOTEL CLARIDGE IS PREFERRED**

The Claridge is the only hotel in St. Louis with tub, shower and circulating ice water in every room. A superior hotel offering splendid accommodations at ordinary hotel rates. . .Two and one-half blocks from Union Station, convenient to all points of interest. . .The Marine Dining Room—finest in town.

350 ROOMS FROM $2. FREE PARKING

TUB, SHOWER AND RUNNING ICE WATER

LOCUST AT EIGHTEENTH
ST. LOUIS
MISSOURI

CELCO is packed in 1 qt. and 1 gallon cans; 5 gal. pails and 15, 30 and 54 gal. drums.

"WE WANT THAT OUNCE!"

- You'll want it too . . . when you read the true-life story of what happened to the Automotive Supervisor of one of America's outstanding motor truck fleets.
- They had a tough "stop and go" operation. Trucks always laid up for overhaul due to the rapid accumulation of sludge, engine varnish, frozen rings, etc. They tried and tested every product on the market . . . but none gave *complete* satisfaction.
- Then came CELCO . . . and after 500,000 miles of trouble-free lubrication, they say "CELCO has helped us so tremendously" that "when an ounce of prevention is worth a pound of cure, *we want that ounce.*"

TRY a quart can of CELCO. Pay nothing for it until and unless it proves to be the answer to your prayer. Your sample is waiting . . . write for it today.

DISTRIBUTORS: A few territories still available. Write for particulars.

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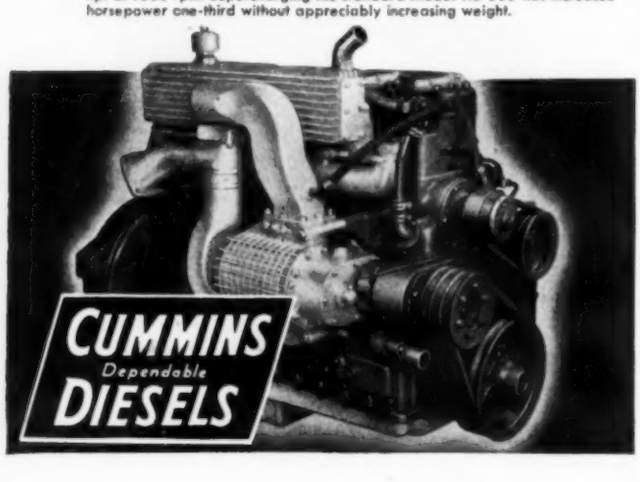
ROCKEFELLER CENTER, NEW YORK, N. Y.

ALL HILLS IN HIGH

The White Star Transit Company, Detroit, replaced gasoline power in a new GMC cab-over-engine auto transport with a Cummins Dependable Diesel, immediately noted these results: (1) all hills on Michigan-Illinois-Indiana-Ohio runs now taken in high gear; (2) running time reduced; (3) fuel mileage increased from 7 to 13 miles per gallon. Maximum operating economy . . . faster schedules without hi-balling or speeding—these add up to extra payload profits. These are the reasons why there are more Cummins Diesels in long-line, heavy-duty operations than all other diesels combined. Cummins Engine Co., 1216 Wilson St., Columbus, Indiana.

Below: Model HBS-600 (supercharged) Cummins Dependable Diesel. 200 hp. at 1800 rpm. Supercharging the standard Model HB-600 has increased horsepower one-third without appreciably increasing weight.



This FOUNTAIN BRUSH
FOR WASHING TRUCKS—BUSSES
CUTS WASHING TIME IN HALF!
Quickest, easiest, best for fleet care. Made in hollow cast aluminum head with four foot handle supplying continuous stream of water. Bristles sturdily set in head and flare to 8" diameter. Weighs only 2¾ pounds. This brush will easily pay for itself many times over in a few months. ORDER TODAY and ask also for FREE descriptive folder.
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$10.50
Postpaid
Guaranteed

New "Facts and Figures" Now Ready

THE CURRENT issue of *"Automobile Facts and Figures"* has recently been released by the Automobile Manufacturers Association, New Center Bldg., Detroit, Mich., containing the latest data from official and authoritative sources on motor transport, production, distribution and use of motor vehicles; employment, tax payments, etc.

Included for the first time is a detailed inventory of the highway and street systems of the United States, presented together with a group of maps showing the actual flow of traffic and designating the country's strategic highway routes. All this data was made available through the U. S. Public Roads Administration as a result of the state-wide highway planning surveys.

Of special interest are the figures from the recent report of the Federal Coordinator of Transportation, establishing that motor vehicle users have paid more than their share of highway and street costs in special motor taxation.

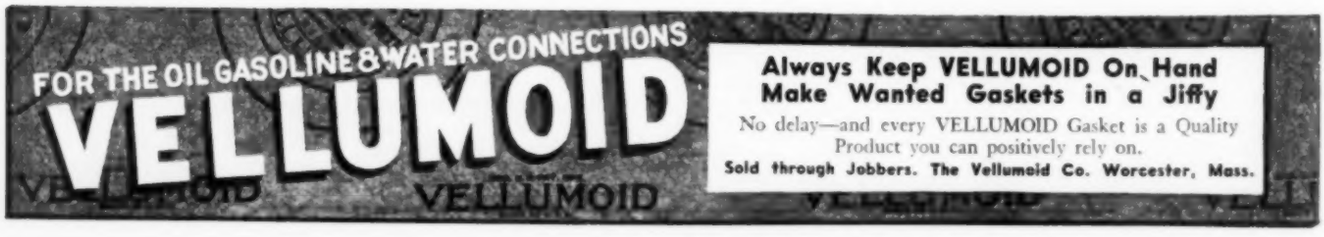
Evidence of the degree to which personal automobiles, both in the country and cities, have become essential for business purposes, is also offered in the new booklet.

•

Buses Cover Over Half Billion Miles

BUSES representing large intercity and suburban lines of the U. S. covered 569,615,653 miles in 1939 and carried 235,987,103 common and charter revenue passengers according to figures released by the I. C. C. This is an increase in mileage of 8.7% and in passengers of 15% over 1938.

These figures cover only Class 1 carriers with annual gross revenue of more than $100,000 and represent about one-fifth of the total bus mileage of the country and one-twentieth of total passengers carried.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VELLUMOID
Always Keep VELLUMOID On Hand
Make Wanted Gaskets in a Jiffy
No delay—and every VELLUMOID Gasket is a Quality Product you can positively rely on.
Sold through Jobbers. The Vellumoid Co. Worcester, Mass.

S.A.E. Clears Up Misunderstanding on 10-20-W

SEVERAL years ago considerable laboratory and field test work was done on engines by both the automotive and oil industries to determine the effect of various factors on the torque required to start an engine at low temperatures. It was found that the viscosity of the oil at the temperature of the crankcase was one of the most important factors. While the results varied from engine to engine there was a definite indication that marked increases in viscosity made starting difficult if not impossible.

As a result of this information, the SAE Lubricants Division prepared and published for information in 1933 a trial classification for winter crankcase oils designated as 10-W and 20-W. The limits proposed were as follows:

S.A.E. 10-W:—To have a viscosity in Saybolt seconds at Zero F., of 5,000 to 10,000 seconds.

S.A.E. 20-W:—To have a viscosity in Saybolt seconds at Zero F., of 10,000 to 40,000 seconds.

This classification was not standardized by the SAE, but it has been adopted by both the automotive and petroleum industries, and is now thoroughly recognized as an "industry standard" without official SAE status.

Since there is at present no official method for estimating or determining viscosity at zero F, many commercial lubricants, meeting the original classification of 10,000 sec at zero F, are either rejected or reported as being misbranded. To establish an official method for estimating viscosity at zero F, and to clear up the misunderstanding that exists at the present time, a statement was prepared by the SAE Lubricants Division, Subdivision C, in cooperation with ASTM Committee D2, Subcommittee V, and has been approved by the SAE Lubricants Division for publication as General Information in the 1941 SAE Handbook, supplementing the SAE Lubricants Classification.

●

Safety Programs Have Cut Accident Rate

ORGANIZED safety measures by commercial vehicle operators and drivers have reduced the fatal accident rate for motor trucks by 29 per cent since 1927, according to latest statistics.

Education of drivers, better roads, mechanical improvements in trucks and trailers and constant care for safety all have contributed to this record. Traffic experts point to the large number of commercial fleets competing for safety prizes as evidence of the emphasis on careful driving in truck operation today.

THE NUT *that is reducing maintenance costs for many of the largest and best managed truck and bus fleets . . .*

A 56-page Catalog and Data Book contains a graphic explanation of the Elastic Stop principle, presents test and application data, and lists the complete line of nuts • **Write for a copy.**

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2334A VAUXHALL ROAD • UNION, NEW JERSEY

Elastic Stop SELF-LOCKING NUTS

RECORD MASTER ON EACH TRUCK
WON'T COST A CENT!

That's a fact! Instead of your RECORD MASTERS costing you anything, they will actually pay you a dividend each month through savings they will make. Overtime caused by needless delays: wasted time; speeding to make up lost time; delays caused by inefficient routing—all these COST you money. RECORD MASTER helps you overcome these losses and turn them into SAVINGS. Users tell us repeatedly that actual records show each unit saving as much as $400 a year! On that basis each RECORD MASTER has paid for itself many times over.

There are other advantages RECORD MASTER will give you besides these savings. Slow and irregular routes will show up, and you can change them. Time wasting drivers and speeding drivers will call your attention to themselves. The visible record is an accurate means of conformance to the Hours of Service Act.

This Chart Tells All

Every minute of the truck's working day, the RECORD MASTER is silently and automatically recording a complete summary, minute by minute, of what goes on. At the end of the day or week, the chart can be removed and carefully studied for the story it will tell. Write us today for FREE FOLDER giving you the whole story. Ask, also, about the STOP MASTER which automatically eliminates excessive motor idling.

HERCULES AUTOMOTIVE SALES CORP.
THORPE BUILDING MINNEAPOLIS, MINN

Works Like Dynamite!

Effective hot or cold tank carburetor and fuel pump cleaner may be made from regular GUNK CONCENTRATE #96 and low cost chlorinated and lacquer thinner type solvent diluents.

Chemical laboratory formula bulletins telling you how to make it and where to get the proper diluents are available without charge to GUNK users.

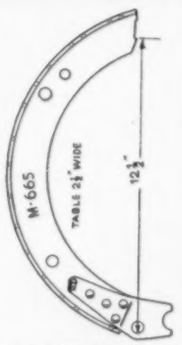
Hot tank solutions are for those who are impatient for quick results. Cold tank solutions work just as well, are simple, low in cost, but slower.

The CURRAN CORP. MALDEN — HEADQUARTERS for SELF EMULSIFYING SAFETY SOLVENTS — **MFG. CHEMISTS MASS.**

"The Brake People"

MILEY

BRAKE LININGS · BRAKE SHOES · BRAKE PARTS



M-665 is MILEY Brake Shoe for all Ford 1938 1½ Ton Trucks. MILEY has a complete line of Brake Shoes for all popular cars and trucks.

You Can't Step on the Brakes for Your Drivers . . . .

. . . but you can line your brakes with MILEY Linings . . . can give them a fast, double stopping power brake lining and assure yourself long, trouble-free service and lower operating costs, too.

MILEY BLACK GOLD, the densest carbon base lining, provides a smooth pedal and lots of extra mileage. EBONITE, the zinc and resin impregnated brake lining that smooths drums by "babbitting," is the ideal lining for today's overloads and higher speeds.

Equip your cars and trucks with either BLACK GOLD or EBONITE, or both in Combination (depending on make and model) for fast, double stopping power under any conditions. Ask MILEY or your MILEY Distributor for brake lining information . . . get the correct MILEY lining for your equipment and operating conditions.

Write today for samples of each type and the name of your nearest MILEY Dealer.

GOOD BRAKE LINING

L. J. MILEY CO.

CHICAGO . . . U. S. A.

1056 W. ADAMS ST., CHICAGO, U. S. A.

HOTEL BARLUM

Now one of the

ALBERT PICK HOTELS

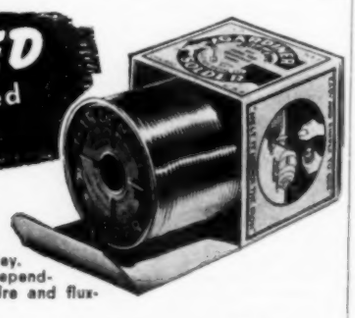
21 FLOORS OF OUTSIDE ROOMS

Each with Combination Tub and Shower

FROM $2 DAILY SINGLE

• DETROIT •

PREFERRED By Thrift-Minded Solder Users



• Modern methods, exclusive with Gardiner give this time-tested Acid-Core Solder distinctive qualities that save time and money. Jobbers everywhere sell Gardiner dependable, economical body, bar, solid wire and flux-filled solders.

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